轮机英语综合试题 33-48 期

中华人民共和国海事局
2004 年第 1 期海船船员适任证书全国统考试题(总第 33 期)
科目：轮机英语　　试卷代号：803
适用对象：无限、近洋航区 3000KW 及以上船舶大管轮
（本试卷卷面总分 100 分，及格分为 70 分，考试时间为 100 分钟）

答题说明：请选择一个最合适的答案，并将该答案按答题卡要求，在其相应位置上用 2B 铅笔涂黑。第 1 题至 68 题，每题 1 分，第 69 题至 76 题，每题 1.5 分,第 77 题至 78 题，每题 10 分。
一、单项选择题：

1． The exhaust valve is opened at about the same time _____the air inlet ports are opened.
A. before　　B. after　　C. when　　D. until

2． Cylinder wall temperature, fuel oil sulphur, and oil passage _____.
A. are interdependent　　B. are not interdependent
C. have nothing to do with each other　　D. are independent

3． Acid solution _____ in the system can be tested from time to time by putting some on to a piece of lime.
A. strength　　B. dense　　C. percentage　　D. velocity

4． Machinery driving fuel oil transfer and fuel oil service pumps must be fitted with a remote means of stopping the machinery from _____.
A. within the space concerned　　B. outside the space concerned
C. the throttle station　　D. within the fire room

5． Cylinder oil is a high viscosity mineral oil, with a _____machined to the anticipated sulfur content of the fuel.
A. TAN　　B. TBN　　C. SAN　　D. SBN

6． The tendency for lubricating oil to thin out at high temperatures and thicken at low temperatures will be characterized by a _____.
A. low viscosity index　　B. high viscosity index
C. high neutralization number　　D. low demulsibility quality

7． When considering the lowest fuel system operating temperature, _____ are important.
A. specific gravity or relative density
B. open flash point and closed flash point values
C. higher calorific and lower calorific values
D. cloud point and pour point values

8． In _____the incoming air is directed upwards, pushing the exhaust gases before it and then the exhaust gases travel down.
A. loop scavenging　　B. cross scavenging　　C. uniflow scavenging　　D. supercharging

9． _____ is usually driven by the engine camshaft and supplies pilot air to the cylinder air start valve.
A. An air receiver　　B. An operating valve　　C. An automatic valve　　D. An air distributor

10． Which of the following conditions can cause above normal air temperature to develop in the intake manifold of a four-stroke/cycle, turbo-charged, diesel engine?
A. Clogged air intake filters.　　B. Piston blow-by.
C. A defective after-cooler.　　D. Faulty exhaust valves.

11． Misalignment of an engine crankshaft can be detected by measuring_____of crank webs for each unit of the

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engine.

A. diameters B. lengths C. deflections D. none of the above

12. A crankshaft whose center of gravity coincides with its center line is said to be _____.

A. dynamically balanced B. statically balanced C. counter balanced D. resonantly balanced

13. In a diesel engine, the main bearings are used between the _____.

A. connecting rod and the crankshaft B. wrist pin and the connecting rod

C. camshaft and the engine block D. crankshaft and the engine block

14. We should not start the engine unless the turning gear is _____.

A. on B. disengaged C. bolted D. unscrewed

15. When the exhaust ports or valves are opened, the _____begin to exhaust.

A. carbon and water B. refrigeration steam C. burnt gases D. oil sludge

16. We'd better take _____to save fuel consumption, you know it would be useless to get there earlier.

A. nominal speed B. economical speed C. rated speed D. slow speed

17. Shaft sealing in a centrifugal pump can be effected by _____.

A. the mechanical seal B. packed stuffing boxes C. either A or B D. neither A nor B

18. Most pump manufacturers recommend that the suction piping dimension for centrifugal pumps be _____.

A. one size smaller than the pump suction nozzle

B. the same size as the pump suction nozzle

C. one size larger than the pump suction nozzle

D. installed with a short radius elbow at the pump

19. The water level in a steaming auxiliary boiler will always _____.

A. rise when the steam pressure is increased

B. remain constant as long as the feed pump operates

C. fall when the steam pressure is decreased

D. vary as the steam demand changes

20. The concentration of total dissolved solids in the water of an auxiliary boiler can increase as a result of _____.

A. seawater contamination B. frequent surface blows

C. dissolved oxygen deaeration D. frequent bottom blows

21. Sediment collects in a tubular purifier_____.

A. on top cover B. on sides of bowl C. in drain line on the discs D. on the discs

22. The operating water is supplied under the _____of an oil separator.

A. sliding bowl bottom B. bowl hood C. bowl D. filter units

23. The bilge main is arranged to drain any watertight compartment _____ballast, oil or water tanks and to discharge the contents overboard.

A. rather than B. other than C. in addition that D. except for

24. The oil sludge is burnt in the _____onboard. I’ll show you the ashes.

A. boiler B. main engine C. auxiliary engine D. incinerator

25. When making entries in the Oil Record Book, the date, operational code, and item number shall be inserted in the appropriate columns. Furthermore, the required particulars shall be _____.

A. recorded only for accidental oil discharges

B. recorded only for operations involving discharge of oily waste

C. signed by the oiler who enters them in the Oil Record Book

D. recorded chronologically in the blank space

26. Which bearing will carry the load on two small points diametrically opposite to each other?

A. Needle B. Tapered roller C. Roller D. Ball

27. In a general cargo crane, _____ is fitted to raise or lower the jib.

A. the slewing motor B. the luffing motor C. the hoisting motor D. none of the above

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28. In an electro-hydraulic steering gear system, when will the variable displacement pump be placed on stroke?
A. When the helm is at any angle other than amidships.
B. When the six-way valve is opened.
C. When the ram relief valves lift.
D. When the rudder angle is different from the position of the helm.
29. With reference to rules governing steering gear, which one of the following rules is incorrect ?
A. It is required that all ships are provided with two independent steering gear systems that is one main and one auxiliary.
B. The auxiliary gear could be power operated in passenger ships.
C. The auxiliary gear must be of adequate strength and sufficient to steer a ship at navigable speed.
D. All moving parts of the steering gear must be guarded against any possible damage.
30. A refrigeration system contaminated with moisture can be affected by _____.
A. acid formation B. sludge formation C. ice in the expansion valve D. all of the above
31. A dirty intercooler on the ship service air compressor will result in _____.
A. decreased compression ratio B. higher than normal power consumption
C. un-loader malfunction D. water in the lubricating oil
32. Which of the problems listed would cause the discharge temperature of an R-22 refrigeration compressor to increase?
A. Thermal expansion valve frozen open. B. Suction gas heat exchanger bypassed.
C. Condenser clogged or fouled. D. High pressure cutout switch inoperative.
33. Zinc rods are installed in the refrigeration system _____.
A. liquid strainer B. liquid receiver C. saltwater condenser D. evaporator
34. The fire pumps must be capable of delivering a total quantity of water at a defined head , not less than_____ of the total bilge pumping capacity.
A. one-third B. two-thirds C. one-fourth D. two-fourths
35. Which of the following factors will have the greatest effect on the heating load within a conditioned space?
A. Solar gain B. Infiltration and ventilation air
C. Occupants inside the space D. Entertainment equipment within the space
36. On commonly used ships, if two A.C. generators are operated in parallel, the load is distributed evenly by _____.
A. varying the D.C. exciter voltage B. varying the reluctance of the air gap
C. regulating the speed of prime mover D. shorting out part of the armature windings
37. Which of the listed sections of an emergency switchboard is used to supply power for alarm signals under emergency conditions?
A. The generator and bus transfer section B. The 450 volt, 60 cycle, 3 phase bus
C. The 120 volt, 3 phase, 60 cycle bus D. The 24 volt DC bus
38. Which of the following should be the FIRST step in removing a generator from parallel operation?
A. Trip the generator off the switchboard.
B. Turn off all electrical equipment.
C. Remove the load from the 'off going' generator.
D. Increase the cycles of the generator staying on the line.
39. Which of the listed devices is used to measure pressure and convert it to an electrical signal?
A. Transducer B. Reducer C. Transformer D. Rectifier
40. An indicator on the main switchboard should show _____the emergency battery is in service or not.
A. which B. when C. weather D. whether
41. The number of cycles per second occurring in AC voltage is known as the _____.

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A. phase angle B. frequency C. wave form D. half mode

42. While on watch in the engine room, you hear a continuous sounding of the general alarm. Which of the following actions should you take?

A. Make an entry in the official logbook.

B. Open the master control valves on the fixed CO2 system.

C. Start the fire pump and check discharge pressure.

D. Secure auxiliary condenser overboard discharge.

43. The additional mark _____ in the Classification Certificate for Machinery represents that personnel are watching at engine assembly control station and monitoring all machinery and electronic devices.

A. BRC B. MCC C. AUT-0 D. AUT-1

44. If the atomizer holes are enlarged beyond the maker's recommended size , the atomizer must be _____.

A. repaired B. replaced C. replenished D. repeated

45. In a diesel engine, an extremely leaking exhaust valve can cause _____.

A. misfiring B. pre-ignition C. interrupted scavenging D. reduced scavenging

46. One cylinder of a diesel engine is persistently knocking and does not cease when the fuel supply to that cylinder is secured. Which of the following problems may be the cause?

A. Low loading of the cylinder. B. Excessive cooling of that piston.

C. Sluggish ring action on the piston. D. A mechanical defect in a working part.

47. Poor combustion in a diesel engine can be caused by _____.

A. high compression pressure B. low intake air temperature

C. low exhaust pressure D. high scavenge air temperature

48. Any increase in the exhaust back pressure of a four-stroke/cycle diesel engine will _____.

A. reduce engine horsepower output B. aid in silencing the exhaust noise

C. increase the mean effective pressure D. contribute to effective cylinder scavenging

49. Hearing a strong noise, _____at once.

A. the engine stopped B. the engine was stopped

C. he stopped the engine D. he had stopped the engine

50. Fix the fuel injector into_____after repair.

A. the cylinder liner B. the cylinder cover C. the cylinder jacket D. the piston

51. Lower suction pressure of a pump may be caused by _____.

A. too much air in the pipe line B. closed inlet valve

C. empty tank D. leaky pipe

52. Diesel engine exhaust temperatures may be used to indicate _____.

A. leaking exhaust valves B. an overloaded cylinder

C. a clogged injector nozzle D. all of the above.

53. The indications of a scavenge fire are excessive black smoke, _____ and peeling from scavenge trunking.

A. turbo-chargers surge B. spark seen from the drains C. paint blistering D. all above are right

54. It is well known that the whole power distribution of the ship’s electrical services mainly depend on the_____.

A. sub-boards B. main switchboards C. emergency switchboards D. distribution boards

55. Combustion knock can occur in the cylinders of a diesel engine under any condition permitting _____.

A. a shortened ignition delay period

B. a lean fuel/air mixture

C. excess fuel in the combustion chamber

D. rapid vaporization of injected fuel droplets

56. Oil mist detectors are usually used on board to detect oil mist density within _____.

A. the engine crankcase B. the engine scavenge boxes

C. drain tanks D. fuel tanks

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57. Before doing maintenance on electrical equipment, you should _____.
A. turn off power first B. turn on power first C. with a test pen in hand D. tell C/E
58. When start a screw pump, the by pass valve should be _____.
A. closed B. opened fully C. cracked open D. partly open
59. Our company has built a new ship in Hamburg and I am going to fly there to_____.
A. hand it over B. take it over C. carry it over D. carry it out
60. Routine monitoring of a diesel engine should include _____.
A. checking for leaks B. checking temperatures and pressures
C. listening for abnormal noises D. all of the above.
61. Which of the precautions listed should be observed when taking on diesel fuel?
A. Secure all lighting to the main deck.
B. Provide a portable fan to blow away fumes.
C. Prohibit smoking in the area.
D. Display a black triangle during daylight hours.
62. The conventions under which the port state control inspection is carried out include all the following except_____.
A. SOLAS 74 B. MARPOL 73/78 C. STCW 78/95 D. ISM Code
63. A portable foam fire extinguisher is placed in operation by _____.
A. turning it upside down B. pressing the foam lever
C. squeezing the grip handle D. opening the hose valve
64. In cleaning up an oil spill, the use of chemical agents would _____.
A. absorb the oil for easy removal B. remove the oil from the water
C. disperse or dissolve the oil in the water D. not affect the oil
65. While on watch in the engine room, you hear a continuous sounding of the general alarm. Which of the following actions should you take?
A. Make an entry in the official logbook.
B. Open the master control valves on the fixed CO 2 system.
C. Start the fire pump and check discharge pressure.
D. Secure auxiliary condenser overboard discharge.
66. One of the disadvantages of using carbon dioxide to extinguish a fire in an enclosed space is _____.
A. the ‘ snow ’ which is sometimes discharged along with the gas is toxic
B. prolonged exposure to high concentrations of CO 2 gas causes suffocation
C. rapid dissipation of the CO 2 vapor
D. the CO 2 gas is lighter than air and a large amount is required to extinguish a fire near the deck
67. The company should establish procedures to ensure that the ship is maintained_____ the provisions of the relevant rules and regulations.
A. out of accordance with B. in relation to C. in conformity with D. in connection with
68. The maximum Blood Alcohol Concentration (BAC) rate on board shall not be more than _____ by weight any time when being tested. But watch-keepers are not allowed to drink any alcoholic beverage _____before their watch.
A. 0.08%/ 4 hours B. 0.08%/ 2 hours C. 0.04%/ 4 hours D. 0.04%/ 2 hours

二、关联题（每组关联题题干下有 4 个小题，每小题 4 个选项）
第一组：
Because the exhaust gas driven turbo-blower cannot provide enough air at low engine speeds, the pressurized air should be cooled to increase the charge air density. As the air passes through the charge air cooler, its temperature may be reduced and moisture condensed, with the condensate in danger of being carried into the engine. So a water separator should be mounted beneath the bottom part of the engine inlet manifold.

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Lubricating oil from the compressor will pass along the air lines and deposit on them, in the event of a cylinder air starting valve leaking, hot gases would pass into the air pipes and ignite the lubricating oil. If starting air were supplied to the engine, this would further feed the fire and could lead to an explosion in the pipelines. In order to prevent such an occurrence, cylinder-starting valves should be properly maintained and the pipelines regularly drained. Also oil discharged from compressors should be kept to a minimum, by careful maintenance.

69. A water separator is used in order to _____.

A. keep the air from being carried into the engine

B. keep the moisture from being condensed

C. keep the danger from being carried into the engine

D. take away the condensate from the air

70. Why should we use a charge air cooler?

A. In order to increase the charge air temperature.

B. In order to increase the charge air pressure.

C. In order to reduce moisture condensed.

D. In order to increase the charge air density.

71. Which of the following may cause an explosion according to the passage?

A. Starting air cannot be supplied into the engine.

B. Air starting valve leaks and starting air is supplied into the engine.

C. Cylinder-starting valves are properly maintained.

D. Oil discharged from compressors is kept to a minimum.

72. In order to avoid igniting the lubricating oil and leading to an explosion in the pipelines, _____.

A. pipelines should be regularly drained

B. cylinder-starting valves should be properly maintained

C. oil discharged from compressors should be kept to a minimum

D. A+B+C

第二组：Maintenance and Overhauling

Satisfactory and proper operation of the engine depends not only on correct manoeuvring but also on how well it is kept in order. Regular maintenance of the engine helps a lot in preventing early wear of parts and in ensuring a long service as well as the working efficiency of the engine. With various types of engines, of course, the maintenance and overhaul is different. Instruction books are to be referred to whenever necessary.

The individual parts of the engine should be inspected and thoroughly cleaned at regular intervals. The periods for such overhaul work depend largely on the quality of the lubricating oil and fuel, on the load and on the efficiency of the operator in locating troubles and remedying them in time..

During overhaul the safety rules have to be observed as required in order to prevent the danger of accidents. Special precaution is necessary when the engine is running with the lagging removed. During overhauls with the engine shut down, safety measures should be taken to avoid undesirable turning of the crankshaft. All pipes should be pressure-relieved before the repair work is started. Read the pressure gauges and /or check the pipes by carefully loosening the screw plugs or connections.

If some parts of the running gear are dismantled, before using the turning gear, make sure that no loose parts are jammed in the crankcase where it is easy for them to cause damage.

73. According to the passage, which the following factors are involved to keep the engine satisfactory and proper running?

A. correct manoeuvring B. keep the engine in order

C. refer to the instruction books D. all of above

74. According to the passage, which the following items do influence the periods of the overhauling work?

A. the quality of the lubricating oil

B. the load of the engine

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C. the efficiency of the operator in locating troubles and remedying them in time

D. all of the above

75. According to the passage, we should take special precaution when ____.

A. the engine is running with the removal of lagging B. the engine is shut down

C. pipes are removed D. the screw plugs or connections are lossened

76. According to the passage, line 17 the bold and italic word “it” may propabably mean ____ .

A. running gear B. turning gear C. crankcase D. to cause damage

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2003 年第 3 期海船船员适任证书全国统考试题(总第 32 期)

科目：轮机英语 试卷代号：803

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（本试卷卷面总分 100 分，及格分为 70 分，考试时间为 100 分钟）

答题说明：请选择一个最合适的答案，并将该答案按答题卡要求，在其相应位置上用 2B 铅笔涂黑。第 1 题至 68 题，每题 1 分，第 69 题至 76 题，每题 1.5 分,第 77 题至 78 题，每题 10 分。

一、单项选择题：

69. The rate of pressure rise during the period following fuel ignition process in a diesel engine, is influenced chiefly by the_____.

A. percent of CO 2

B. range of inflammability

C. theoretical fuel/air ratio

D. length of the ignition delay period

70. Which of the following would cause a diesel to have black smoke?

A. leaky injector. B. water in the gas. C. too heavy oil. D. water in the oil.

71. Before dismantling the pipe, would you _____the oil retained in the hose with _____?

A. flash/fresh air B. wash/fresh water

C. flush/compressed air D. rush/diesel oil

72. Machinery driving fuel oil transfer and fuel oil service pumps must be fitted with a remote means of stopping the machinery from _____.

A. within the space concerned B. outside the space concerned

C. the throttle station D. within the fire room

73. Cylinder oil is a high viscosity mineral oil, with a _____machined to the anticipated sulfur content of the fuel.

A. TAN B. TBN C. SAN D. SBN

74. In a normally operating diesel engine, the main cause of lubricating oil contamination in the crankcase is a result of the _____.

A. metal particles loosened by wear

B. air when no air cleaners are used

C. condensation of water vapors

D. breakdown of the lubricating oil by dilution

75. The main engine is cooled with fresh water _____ is added suitable small quantities of chemicals to prevent corrosion.

A. in which B. on which C. to which D. by which

76. As for a diesel engine,lack of combustion air may be due to_____.

A. fouling turbine B. fuel pump faults C. lubrication failure D. excessive cooling

77. _____, remedies must be taken to stop it as early as possible.

A. Any surge occurs B. Any surge occurred

C. Should any surge occur D. Should any surge occurring

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78. To prevent the build up of high stresses engine must not be run continuously _____.
A. faster than dead slow speed B. slower than dead slow speed
C. with the output of MCR D. at critical speeds
79. The turbo-blower comprises a gas turbine and a _____.
A. condenser B. blower C. soot blower D. air receiver
80. The thrust block or thrust bearing, located at the _____ of the engine, may be integral with, or separated from, the bed-plate.
A. fore end B. aft end C. ahead D. astern end
81. The two-stroke cycle begins with the piston coming up from the bottom of its stroke, with scavenge ports in the sides of the cylinder being _____.
A. shut B. closing C. opened D. closed
82. The pressure of pilot air is usually_____ than that of starting air.
A. higher B. lower C. low D. high
83. When a centrifuge is arranged to separate impurities and small amount of water from oil, it is known as a _____.
A. purifier B. separator C. filter D. clarifier
84. The control system for a controllable pitch propeller can be programmed_____.
I. to produce a maximum combined propeller and engine efficiency between itch and a given engine speed
II. for continuous operation of the engine at pre-set condition
A. I only is correct B. II only is correct
C. both I and II are correct D. neither I or II are correct
85. The amount of fluid delivered by a helical pump can be regulated by _____.
A. throttling the pressure line
B. changing the speed of the rotor
C. either A or B
D. None of the above is true.
86. One of the consequences in continuing to operate a centrifugal bilge pump with the discharge valve closed, is that the_____.
A. motor overload will open B. relief valve will open
C. pump will overheat D. motor will overheat
87. When steam is being raised on a boiler, the water level will normally _____.
A. drop as the boiler warms up
B. rise as the boiler warms up
C. remain unchanged until the boiler is hot enough
D. rise and fall with the steam demand
88. Which of the following conditions could cause the feed pump for an auxiliary boiler to lose suction?
A. Increased suction head pressure.
B. Decreased feedwater temperature.
C. Pump recirculating line being open too much.
D. Excessive feedwater temperature.
89. The_____ of the gravity disc is too big. It cause oil to flow through the water outlet. We changed the disc and no oil is found in the water outlet.
A. gravity B. diameter C. circumference D. cylinder
90. The diameter of the gravity disc is too big. It causes oil to flow through the water outlet. We changed the disc and no ___ is found in the water outlet.
A. water B. oil C. scale D. ridge

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91. The fine filters will be arranged _____one can be cleaned while the other is operating.
A. in order to B. because of C. so that D. so as to
92. The term 'discharge', as it applies to the pollution regulations, means_____.
A. spilling B. leaking C. dumping D. All of the above
93. A class ‘C' fire would most likely occur in the_____.
A. engine room bilges B. main switchboard C. paint locker D. rag bin
94. Which of the following statements describes the functions of a reservoir used in a hydraulic system?
A. Dissipate heat B. Trap foreign matter
C. Separate air from the oil D. All of the above
95. _____are used for cargo handling.
A. Cranes B. Mooring winches C. Windlasses D. Foreman
96. In the cargo winch, spur reduction gearing transfers the motor drive to_____.
A. the toping light B. the board brake C. the fail-safe D. the barrel shaft
97. The main steering gear must be able to steer the ship at maximum ahead service speed and be capable at this speed, and at the ship’s deepest service draught, of putting the rudder from 35 degrees on one side to 30 degrees on the other side within no _____.
A. more than 28 seconds B. more than 60 seconds
C. less than 28 seconds D. less than 60 seconds
98. Freon 12 which is used to produce intense cold is normally a_____ when at atmospheric pressure and temperature.
A. liquid B. gas C. solid D. water only
99. Which of the statements listed concerning heat transfer is correct?
A. Heat is always transferred at a constant rate.
B. Heat transfer rate increases as temperature difference increases.
C. The rate of heat transfer is not affected by temperature difference.
D. The high temperature region is known as a heat sink.
100. The cooler as the liquid becomes, _____.
A. the faster it will evaporate B. the slower it will condense
C. the slower it will evaporate D. the faster it will flow
101. In a refrigeration system, if the cooling water to the condenser fails, the_____.
A. box temperature solenoid valve will close
B. expansion valve will close
C. compressor will shutdown
D. king valve will open
102. A feeler or thermal bulb is used for the expansion valve to_____.
A. detect the temperature B. detect the pressure
C. heat the refrigerant D. accelerate the refrigerant
103. If air at 95 ℃ dry bulb temperature and 50% relative humidity is conditioned to 75 ℃ dry bulb temperature and 50% relative humidity, it is an example of _____.
A. cooling only B. cooling and humidifying
C. cooling and dehumidifying D. adiabatic cooling
104. The function of damper windings in a synchronous motor is to _____.
A. eliminate slippage B. provide excitation
C. provide starting torque D. increase efficiency
105. Moisture in a D.C. motor would cause_____.
A. short circuit B. speed up C. slow down D. hunting
106. With reference to rules governing steering gear, which one of the following rules is incorrect ?

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A. It is required that all ships are provided with two independent steering gear systems that is one main and one auxiliary.

B. The auxiliary gear could be power operated in passenger ships.

C. The auxiliary gear must be of adequate strength and sufficient to steer a ship at navigable speed.

D. All moving parts of the steering gear must be guarded against any possible damage.

107. Loss of lubricating oil pressure to the main propulsion diesel engine will actuate a/an_____.

A. overspeed trip B. audible/visual alarm

C. the ships/boats general alarm D. reserve oil storage tank

108. An ohmmeter can be used to measure_____.

A. current flow in a circuit B. voltage between two points in a circuit

C. circuit continuity D. power

109. Temperature control valves installed in the jacket cooling water system of a diesel engine, modulates the rate of water flow through the_____.

A. cooling water pump B. nozzle cooling passages

C. cylinder jackets D. heat exchanger

110. When the bearing becomes dry from lack of oil, the motor shaft may heat to _____ an extent _____it welds itself to the bearing.

A. either/or B. neither/nor C. such/that D. so/that

111. The system will include various_____ such as low tank level alarms and remote operation of tank outlet valves in the events of a fire.

A. switches B. panels C. alarm units D. safety devices

112. The indications of a scavenge fire are excessive black smoke, _____ and peeling from scavenge trunking.

A. turbo-chargers surge B. spark seen from the drains

C. paint blistering D. all above are right

113. An automated diesel engine should normally shut down due to _____.

A. low lube oil temperature B. high ambient air temperature

C. low lube oil pressure D. high exhaust system back pressure

114. A moving object will not accelerate or decelerate _____ a force is applied to it.

A. whether B. if C. unless D. till

115. A diesel engine is operating with excessively high exhaust temperatures at all cylinders. To correct this condition, you should FIRST_____.

A. reduce the engine load B. increase the cooling water flow

C. increase the lube oil pressure D. adjust the fuel rack

116. A main propulsion diesel engine is normally shut down by _____.

A. shutting off the air supply B. over-speeding the engine

C. securing the fuel supply D. securing the ignition system

117. Diesel engine automated control systems may utilize sensing devices of dual function, with sensing ranges providing both alarm and engine shut down capability. Which of the key points listed would only require an alarm sensor?

A. Lube oil pressure and temperature.

B. Jacket water pressure and temperature.

C. Engine over-speed.

D. Lube oil sump level.

118. Fix the fuel injector into_____ after repair.

A. the cylinder liner B. the cylinder cover

C. the cylinder jacket D. the piston

119. Lower suction pressure of a pump may be caused by_____.

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A. too much air in the pipe line B. clogged strainer
C. empty tank D. leaky pipe

120. There is a danger of the starting current _____ that the windings are burnt out.
A. to increase B. to be so increased C. increased D. being so increased

121. The crankshaft deflection is at first to be_____ before and after repair .
A. disassembled B. renewed C. measured D. regulated

122. _____, we continued lifting out the pistons.
A. Late as it was B. As it was late C. Since it was late D. Because of its late

123. Combustion knock occurring in a diesel engine can be caused by _____.
A. excessive fuel penetration B. prolonged injection lag
C. reduced ignition lag D. prolonged ignition lag

124. Rounds _____. Everything is in good order.
A. operated B. made C. run D. done

125. If you ___ the equipment more carefully before sail, we ____ so much trouble now.
A. examined, are not having B. had examined, would not have
C. had examined, would not have had D. should examine, would not have

126. Combustion knock can occur in the cylinders of a diesel engine under any condition permitting_____.
A. a shortened ignition delay period
B. a lean fuel/air mixture
C. excess fuel in the combustion chamber
D. rapid vaporization of injected fuel droplets

127. _____that everything in the engine crankcase is correct, start up the crankcase lubricating oil pump.
A. To satisfy B. To be satisfied
C. After satisfying D. After being satisfied

128. In the engine department, the_____ is looked upon to provide the leadership that is needed.
A. captain B. chief engineer C. chief officer D. chief motorman

129. The value of GM still remains one meter, meanwhile we can pump the ballast water to_____ the ship on even keel.
A. make B. put C. keep D. get

130. Under the provisions of applicable international conventions, ships entitled to fly the flag of a Party are subject, while in the port of a Party, to control by officers duly authorized by the Party. Ships of non-parties or below convention size shall be given_____.
A. more favorable treatment
B. less favorable treatment
C. no more favorable treatment
D. the most favorable treatment

131. If you burned your arm on a bare steam line, the most effective immediate treatment would be to _____.
A. wrap the arm in a tight bandage
B. soak the arm in hot salt water
C. cover the burn with petroleum jelly
D. put the burn in cold water

132. When entering a foam injected space _____ breathing apparatus.
A. put out B. put on C. take off D. take in

133. The fire of electrical equipment is classified as _____ fire.
A. Class A B. Class B C. Class C D. Class D

134. If liquid refrigerant accidentally comes in contact with the eyes, _____ immediately.
A. rub the eyes

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B. irritate the eyes

C. wash the eyes with a heavy boric acid solution

D. obtain medical help

135. Administrations should bear in mind the significance of _____ in maintaining safety of life and property at sea and in preventing marine pollution.

A. advanced nautical equipment

B. advanced performance main engines

C. emergency equipment

D. communication and language skills

136. The International Sewage Pollution Prevention Certificate shall be issued for a period specified by the Administration, which shall not exceed _____ from the date of issue.

A. six months B. one year C. three years D. five years

二、关联题（每组关联题题干下有 4 个小题，每小题 4 个选项）

第一组：

The cooling water in the HT(high temperature) circuit cools the cylinder liners, cylinder heads and turbocharger. From the pump water is supplied to the engine manifold which is cast in the engine block. From the manifold the water is distributed to all cylinder liner sections and from each liner upwards through the cooling water channels in the liner collars. From the liner collars further into the cylinder heads. In the cylinder head the water is forced by an intermediate deck

to flow along the flame plate, around the valves to the exhaust valve seats and up along the fuel injector sleeve. From the cylinder head the water is discharged via a connection piece into the discharge manifold.

The return water from the cylinder heads and turbocharger is supplied to the HT air cooler.

In the first stage of this cooler, most of the heat from the charge air is extracted.

The LT circuit water cools the charge air in the second stage. The necessary cooling for the

LT water is gained from a central cooler. By controlling the LT water temperature to the inter-cooler the correct charge air temperature can be obtained.

For preheating purposes, a heater circuit with a pump and heater are connected in the HT circuit before the engine. Before starting, the HT circuit is heated till about 60℃ by a separate heater The pre-heating of the engine is, prior of starting up and loading on HFO, of utmost importance.

137. From the passage we know that the charge air temperature was controlled by _____.

A. sea water from a central cooler

B. fresh water from a central cooler

C. fresh water from a HT circuit

D. fresh water from the LT circuit

138. The cooling water to cool the engine was forced _____.

A. into the cylinder block and then upwards into the cylinder head

B. into the cylinder intermediate section and then upwards into the cylinder head

C. into the cylinder head and then downwards into the cylinder block

D. into the cylinder ends and then further into the cylinder intermediate

139. After the charge air is discharged into the HT air cooler, _____.

A. the charge air temperature will become higher

B. the charge air temperature will become lower

C. the HT water temperature will remain constant

D. the HT water temperature will become lower

140. Which of the following devices may be used to warm the engine prior to starting?

A. A high temperature cooling water system.

B. A low temperature cooling water system.

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C. A central cooler.

D. The second stage cooler.

第二组:

Combustible gases and vapours, such as petroleum vapour, when mixed in the correct proportion with air in an enclosed vessel will burn so rapidly that an explosion occurs. The burning can be initiated quite easily, ignition often being caused by a relatively small spark. For each gas or vapour there is, however, an upper and lower concentration of vapour in air between which an explosion can occur. These limits are referred to as the lower flammable and upper flammable limits (LFL and UFL) or, alternatively, the lower and upper explosive limits (LEL and UEL). Petroleum vapour for instance, has an LEL of 1.4% and a UEL of 6.4% while hydrogen has an LEL of 4% and a UEL of 75%. Crude oil contains a variety of hydrocarbon mixtures and the vapour contained in crude oil tanks will exhibit a wide variety of upper and lower explosive limits.

141. Which of the following statement is not true?

A. Ignition energy of combustible vapours is small.

B. Combustible gases are easily burned.

C. Petroleum vapour can be initiated when the concentration of the vapour in air is between LFL and UFL.

D. There is a wide range of upper and lower explosive limits of crude oil.

142. The flammable range of hydrogen gas is larger than that of petroleum vapour according to this paragraph, it means _____ .

A. hydrogen gas is easier to burn

B. petroleum vapour is easier to ignite

C. hydrogen gas is more dangerous

D. petroleum vapour is more dangerous

143. The phrase “the correct proportion with air “ means _____.

A. only when the concentration of the mixture is lower than LFL, an explosion occurs

B. only when the concentration of the mixture is higher than UFL, an explosion occurs

C. only when the concentration of the mixture is within the limits, an explosion occurs

D. only when the combustible gases are in air, an explosion occurs

144. The cause of combustible gas explosion is .

A. they burn in an open vessel

B. they burn rapidly in an closed vessel

C. they burn due to too much oxygen

D. they burn due to lack of oxygen

中华人民共和国海事局

2004 年第 3 期海船船员适任证书全国统考试题(总第 35 期)

科目：轮机英语　　试卷代号：803

适用对象：无限、近洋航区 3000KW 及以上船舶大管轮

（本试卷卷面总分 100 分，及格分为 70 分，考试时间为 100 分钟）

答题说明：请选择一个最合适的答案，并将该答案按答题卡要求，在其相应位置上用 2B 铅笔涂黑。第 1 题至 68 题，每题 1 分，第 69 题至 76 题，每题 1.5 分,第 77 题至 78 题，每题 10 分。

一、单项选择题：

1. The connecting rod is fitted between the crosshead and the crankshaft. It transmits the firing force, and together with the crankshaft converts the _____motion to a _____motion.

A. rotary/reciprocating　　B. up and down/fore and aft

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C. fore and aft /up and down D. up and down/ rotary

2. The purpose of the skirt or trunk in four-stroke cycle engines is to act in a similar manner to a_____.

A. crosshead B. crown C. piston rod D. connecting rod

3. Additives _____protective layers on metal surfaces guarding them against corrosion.

A. damage B. form C. dissolve D. contaminate

4. _____ less equipment in contact with sea water, the corrosion problems are much reduced in a central cooling system.

A. Because B. With C. Without D. Though

5. Medium speed engines have a _____power to weight ratio than the slow speed two strokes, but due to the higher speeds tend to have _____maintenance intervals.

A. higher/reduced B. higher/increased C. lower/reduced D. lower/increased

6. _____ neutralizes the acid conditions and _____cleanses the rings and grooves.

A. The detergency/the alkalinity B. The alkalinity/the detergency

C. The inhabitant/ the water D. The additives/the distilled water

7. _____ water is more expensive than fresh water, It has high specific heat and low viscosity.

A. Distilled B. Distilling C. Boiling D. Boiled

8. Charging is the filling of the engine cylinder with a supply or charge of fresh air _____ compression.

A. to need B. ready for C. want to D. going to be

9. Starting air for auxiliary engines may be taken directly from the main reservoirs or through_____.

A. an auxiliary reservoir B. a controlling air bottle

C. an emergency air compressor D. a main air compressor

10. _____ is the removal of exhaust gases by blowing in fresh air .

A. Gas exchange B. Charging C. Scavenging D. Supercharging

11. Indications of _____are loss in power and irregular running of the engine, high exhaust temperatures of corresponding units, high local temperature in scavenge trunk, surging of turbocharger, and sparks and smoke emitted from scavenge drains.

A. a crankcase explosion B. a scavenge fire

C. abnormal compression ratio D. incorrect air/fuel ratio

12. _____ of the controllable pitch propeller enables the blades to be moved to change the pitch angle.

A. An external mechanism B. An internal mechanism

C. An interlock device D. A hunting gear system

13. _____ the repair in so short a time is unknown to us.

A. How they finished B. How did they finished

C. That how they finished D. That how did they finished

14. The position of the piston parts in relation to each other is secured by means of ____in the crown.

A. a mark B. a bolt C. a dowel pin D. a measuring tool

15. Load control on a diesel engine is accomplished by_____.

A. regulating the speed of the turbocharger

B. rotating the fuel injector pump plunger

C. regulating the speed of the fuel oil transfer pump

D. changing engine timing

16. Wear in parts of exhaust valve operation gear will tend to_____ the tappet clearance.

A. increase B. reduce C. rise D. reduction.

17. Pitting in the suction areas of a centrifugal pump bronze impeller is usually caused by _____.

A. cavitation B. electrolysis C. abrasion D. corrosion

18. A double suction centrifugal pump impeller has been installed in the reverse direction, and will _____.

A. have a greater head capacity

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B. operate with increased impeller efficiency
C. discharge through the suction side of the pump casing
D. require more power to turn the shaft

19. Black smoke coming from a boiler can be caused by _____.
A. low water level B. low oil pressure
C. excessively high fuel pressure D. an improper air/fuel ratio

20. Fuel injection equipment must be kept in good condition, timed correctly, and the _____ in each cylinder must also be carefully balanced so that individual cylinders are not overloaded.
A. MIP B. MCR C. MEP D. BHP

21. The separation of impurities and water from __ is essential for good combustion of diesel engines.
A. lube oil B. fuel oil C. turbine oil D. grease

22. When in operation, it is unavoidable that a small amount of oil _____through leakage, and in order to compensate for these leaks the system is connected to a feed pump.
A. escapes B. overheats C. expands D. accelerates

23. The remaining oil/water mixture now flows down into the fine separating compartment and moves slowly between the ___ in the Turbulo separator.
A. catch plates B. swash plates C. cover plates D. bedplates

24. The oil sludge is burnt in the _____onboard. I'll show you the ashes.
A. boiler B. main engine C. auxiliary engine D. incinerator

25. Deck machinery, which is also known as hull machinery, includes all power driven equipment located _____ the machinery spaces that is _____ with the main propulsion plant.
A. inside/associated B. inside/not associated C. outside/associated D. outside/not associated

26. When the desired rudder angle is attained by a typical double ram electro-hydraulic steering gear, the _____.
A. ram relief valves bypass oil to stop rudder movement
B. six-way valve shifts to the neutral flow position
C. steering pump electric motor is de-energized by the transfer switch
D. follow-up gear takes the hydraulic pump off stroke

27. The drive motor will have a brake arranged to fail-safe, i.e. it will _____the load if power fails or machine is stopped.
A. cast B. put C. hold D. let out

28. Special thrust devices are provided on ships to improve their _____at zero ship speed when the rudder is relatively ineffective.
A. brake capabilities B. reversing capabilities
C. maneuvering capabilities D. acceleration capabilities

29. If a hydraulic pump is overheating, the cause may be_____.
A. excessive internal leakage in the pump
B. low discharge pressure and fluid flow
C. excessive fluid level in the hydraulic reservoir
D. operation of the pump at 100% efficiency

30. Some chloronated flourocarbon refrigerants may decompose into a toxic irritating gas if it is _____.
A. stored at temperatures below 60 degrees Fahrenheit
B. charged into a system having copper fittings
C. allowed to mix with compressor oil
D. exposed to an open flame or hot surface

31. Excessive lube oil consumption by a reciprocating air compressor can be caused by _____.
A. using a slightly dirty air filter B. using oil having an excessive viscosity
C. intercooler or after-cooler leaks D. carrying the oil level higher than normal

32. After fitting back in place the gear wheels, don't forget to_____ them.

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A. fulfill B. eliminate C. grease D. bend

33. In a refrigeration system, if the cooling water to the condenser fails, the_____.

A. box temperature solenoid valve will close B. expansion valve will close

C. compressor will shutdown D. king valve will open

34. A feeler or thermal bulb is used for the expansion valve to_____.

A. detect the temperature B. detect the pressure

C. heat the refrigerant D. accelerate the refrigerant

35. The amount of moisture in a given sample of air, when compared with the amount of moisture the air could hold if totally saturated at the existing temperature of the sample, is called _____.

A. absolute humidity B. specific humidity C. effective humidity D. relative humidity

36. The division of kilowatt load between two paralleled alternators is determined by the _____.

A. amount of field excitation of the leading machine

B. load-speed characteristics of the governors

C. amount of field excitation to the lagging machine

D. type of alternator

37. The resistance of a conductor varies _____.

A. directly as its length and inversely as its cross-sectional area

B. inversely as its length and directly as its cross-sectional area

C. directly as its length and directly as its cross-sectional area

D. inversely as its length and inversely as its cross-sectional area

38. The pump used to send the bilge water into the oily water separator _____ the mixture because this might create finer oil particles.

A. should agitate B. should not agitate C. should mix up D. should not add up

39. Temperature measurement by instruments will give a value in degree Celcius. This scale of measurement is normally used for all readings and temperature values _____dealing with theoretical calculations involving the gas laws.

A. in addition to B. in addition that C. except that D. except when

40. Bourdon Tube is probably the most commonly used _____measuring instrument.

A. the absolute pressure B. the gauge pressure

C. the vacuum pressure D. the differential pressure

41. The most inefficient method of voltage reduction from the stand-point of power loss, is a/an _____.

A. capacitor in series with the load B. inductor in series with the load

C. capacitor and inductor in series with the load D. resistor in series with the load

42. While on watch in the engine room, you hear a continuous sounding of the general alarm. Which of the following actions should you take?

A. Make an entry in the official logbook.

B. Open the master control valves on the fixed CO2 system.

C. Start the fire pump and check discharge pressure.

D. Secure auxiliary condenser overboard discharge.

43. Remote control means that _____.

A. the system is manned manually B. the system is situated remotely from the operator

C. the system is controlled automatically D. all the above

44. The crankshaft deflection is at first to be_____ before and after repair .

A. disassembled B. renewed C. measured D. regulated

45. A main propulsion diesel engine is normally shut down by _____.

A. shutting off the air supply B. over-speeding the engine

C. securing the fuel supply D. securing the ignition system

46. The trend nowadays is to build the frame box as a separate fabricated construction and then, after stress relieving and

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machining the mating surfaces, to mount it on the _____. This has the advantage of saving weight.

A. seating B. bed-plate C. entablature D. cylinder block

47. A diesel engine is operating with excessively high exhaust temperatures at all cylinders. To correct this condition, you should first _____.

A. reduce the engine load B. increase the cooling water flow

C. increase the lube oil pressure D. adjust the fuel rack

48. In a diesel engine, an extremely leaking exhaust valve can cause _____.

A. misfiring B. pre-ignition C. interrupted scavenging D. reduced scavenging

49. Persistent knocking in one cylinder of an eight cylinder diesel engine would MOST likely be caused by _____.

A. using fuel oil with low cetane number B. a badly worn piston pin

C. a loose flywheel key D. a loose bed plate bolt

50. Humans are still needed to monitor the condition of the boiler all the time the latter is operated, _____ it is just to acknowledge an alarm buzzer or flashing light in a control room.

A. even if B. so that C. such that D. in order that

51. The reciprocating pump can't draw water from a tank may be caused by_____.

A. leaky pipe B. opened inlet valve

C. too much water in tank D. None of the above

52. Diesel engine exhaust temperatures may be used to indicate_____.

A. leaking exhaust valves B. an overloaded cylinder

C. a clogged injector nozzle D. all of the above.

53. The trend nowadays is to build the frame box as a separate fabricated construction and then, after stress relieving and machining the mating surfaces, to mount it on the _____. This has the advantage of saving weight.

A. seating B. bed-plate C. entablature D. cylinder block

54. During _____, the starting air valves should be closed to prevent the engine from turning.

A. overhaul B. running C. blowing down D. All of the above are correct

55. _____is a function of the reactive / resistive characteristics of the load items and cannot be adjusted by manipulating the alternator control devices.

A. Power factor B. Power ratio C. Compression ratio D. Compression factor

56. Oil mist detectors are usually used on board to detect oil mist density within ___ .

A. the engine crankcase B. the engine scavenge boxes C. drain tanks D. fuel tanks

57. Check the insulation with a_____.

A. ammeter B. voltmeter C. megger tester D. wattmeter

58. Hearing a strong noise, _____at once.

A. the engine stopped B. the engine was stopped

C. he stopped the engine D. he had stopped the engine

59. The data to be recorded on this sheet _____ the performance of the engine.

A. makes the experts to judge B. enables the experts to judge

C. make the experts judging D. enable the experts to judge

60. Tell the engineer on duty to keep close watch over the machine _____ temperature is sometimes a bit too high.

A. which B. what C. that D. whose

61. _____allows the engines to be placed wherever is most suitable, as they no longer have to be aligned with reduction gearing and shafting as is the case with conventional installations.

A. Diesel engine propulsion B. Diesel electric propulsion

C. Steam engine propulsion D. Gas turbine propulsion

62. The conventions under which the port state control inspection is carried out include all the following except _____.

A. SOLAS 74 B. MARPOL 73/78 C. STCW 78/95 D. ISM Code

63. _____ may have two emergency source of power, thus requiring two emergency switchboards.

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A. Large passenger vessels B. General cargo ships C. Container ships D. Oil tankers

64. If liquid refrigerant accidentally comes in contact with the eyes, _____immediately.

A. rub the eyes B. irritate the eyes

C. wash the eyes with a heavy boric acid solution D. obtain medical help

65. The necessity for administering artificial respiration may be recognized by the victim's _____.

A. vomiting B. blue color and lack of breathing

C. irregular breathing D. unconscious condition

66. After a fire has been extinguished in a closed space, personnel may safely enter the space when_____.

A. smoke density has been decreased sufficiently to see the bulkhead opposite the compartment's entrance

B. a lifeline and explosion proof flash light are used

C. all smoke and toxic fumes are removed and an adequate oxygen supply is present

D. overhaul has been completed to remove any possible source of re-ignition

67. Administrations should bear in mind the significance of _____in maintaining safety of life and property at sea and in preventing marine pollution.

A. advanced nautical equipment B. advanced performance main engines

C. emergency equipment D. communication and language skills

68. The word “critical” in the sentence “This is a critical period as any loss of propulsion, or steering, can lead to collision, grounding, or other damage to the ship.” can be best replaced by_____.

A. dangerous B. best C. bad D. important

二、关联题（每组关联题题干下有 4 个小题，每小题 4 个选项）

第一组：

The 1978 STCW Convention was the first to establish basic requirements on training, certification and watch-keeping for seafarers on an international level. Previously the standards of training, certification and watch-keeping of officers and ratings were established by individual governments, usually without reference to practices in other countries. As a result standards and procedures varied widely, even though shipping is the most international of all industries.

The Convention prescribes minimum standards relating to training, certification and watch-keeping for seafarers which countries are obliged to meet or exceed.

The Convention did not deal with manning levels: IMO provisions in this area are covered by regulation 13 of Chapter V of the International Convention for the Safety of Life at Sea (SOLAS), 1974, whose requirements are backed up by resolution A.890(21) Principles of safe manning, adopted by the IMO Assembly in 1999, which replaced an earlier resolution A.481(XII) adopted in 1981.

The Articles of the Convention include requirements relating to issues surrounding certification and Port State Control.

One especially important feature of the Convention is that it applies to ships of non-party States when visiting ports of States which are Parties to the Convention. Article X requires Parties to apply the control measures to ships of all flags to the extent necessary to ensure that no more favorable treatment is given to ships entitled to fly the flag of a State which is not a Party than is given to ships entitled to fly the flag of a State that is a Party.

The difficulties which could arise for ships of States which are not Parties to the Convention is one reason why the Convention has received such wide acceptance. By December 2000, the STCW Convention had 135 Parties, representing 97.53 percent of world shipping tonnage..

69. Before the establish of the STCW78, the standards of training, certification and watch-keeping of officers and ratings _____.

A. were established by IMO

B. were established by a famous organization

C. were established by individual governments with reference to practices in other countries

D. varied widely among countries

70. The regulation 13 of Chapter V of the SOLAS 1974 covered _____.

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A. the manning levels B. the standards of training certification
C. the standards of training D. the standards of watch-keeping

71. One especially important feature of the STCW Convention is _____.
A. the adoption of the policy " more favorable treatment"
B. the adoption of the policy " no more favorable treatment"
C. the adoption of the minimum standards
D. the adoption of the obligatory standards

72. One reason why the Convention has received such wide acceptance is _____.
A. that it is only the minimum standards
B. that it is the obligatory standards
C. that it is established by IMO
D. the difficulties which could arise for ships of States which are not Parties to the STCW Convention

第二组：

While carbon dioxide is used in some extinguishers as an inert propellant the gas is also used extensively as a blanketing agent. In a carbon dioxide portable extinguisher, the carbon dioxide is in liquid form and is at a pressure of 6 bar at 20℃ , necessitating a far stronger container. This type of extinguisher can only be recharged ashore. To check for leakage a record should be kept of the weight of the extinguisher. Alternatively the liquid level can be determined by using a special instrument which uses a radioactive source and a Geiger-Muller counter to detect the gas/liquid interface although this method is usually only used on large fixed CO 2 installation.
This could be lethal if discharged accidentally in a confined space and for this reason this type of extinguisher in not allowed in the accommodation.

73. Which of the following statements is not true ?
A. Carbon dioxide is usually used as a propellant.
B. Carbon dioxide is usually used as an extinguishing gas.
C. If the carbon dioxide is used as a blanketing agent, it should be pressurized.
D. The carbon dioxide extinguisher can only be used ashore.

74. In what state is the carbon dioxide in the portable extinguishers?
A. powder B. dry ice C. liquid D. gas

75. How do you detect the leakage of a carbon dioxide portable extinguisher?
A. to record gas pressure. B. to measure its weight.
C. to measure its liquid level. D. to monitor the radioactive source.

76. The reason that the carbon dioxide extinguisher can't be used in the accommodation is that_____.
A. carbon dioxide is a toxic gas
B. carbon dioxide is an inertial gas
C. there is a radioactive source in the extinguisher
D. it has no effect in a confined space.

中华人民共和国海事局
2005 年第 1 期海船船员适任证书全国统考试题(总第 36 期)
科目：轮机英语 试卷代号：803
适用对象：无限、近洋航区 3000KW 及以上船舶大管轮
（本试卷卷面总分 100 分，及格分为 70 分，考试时间为 100 分钟）

答题说明：请选择一个最合适的答案，并将该答案按答题卡要求，在其相应位置上用 2B 铅笔涂黑。第 1 题至 68 题，每题 1 分，第 69 题至 76 题，每题 1.5 分,第 77 题至 78 题，每题 10 分。

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一、 单项选择题：

1. Critical speeds occurring within the operating speed range of a main propulsion diesel engine may be changed, or have their damaging effects reduced by a/an _____.

A. engine support vibration isolator B. detuner or viscous fluid damper

C. lightened crankshaft flywheel D. spherically seated crankshaft bearing

2. Precision engine bearing inserts are manufactured with a small portion of the bearing ends extending beyond the bearing housing or caps. The installation process of these bearings requires sufficient _____.

A. overlap B. crush C. lap or lead D. protrusion

3. The engine has one or two group of fuel pumps, depending upon _____.

A. the number of fuel valves B. the number of cylinders

C. the speed of engine D. the power of engine

4. Which of the following statements concerning the factors affecting ignition delay is correct?

A. An increase in intake air temperature will increase ignition delay.

B. An increase in coolant temperature will decrease ignition delay.

C. An increase in combustion chamber turbulence will increase ignition delay.

D. An increase in compression ratio will increase ignition delay.

5. _____providing lubricating films, oil used in marine diesel engines has to remove heat from oil cooled piston.

A. Except for B. Beside C. Except D. In addition to

6. The ability of an oil to separate cleanly from an oil and water mixture is referred to as its _____.

A. precipitation number B. neutralization number C. pour point D. demulsibility

7. Before dismantling the pipe, would you _____the oil retained in the hose with _____?

A. flash/fresh air B. wash/fresh water C. flush/compressed air D. rush/diesel oil

8. Before “stand by” is rung on the engine telegraph, it is usual to give the main diesel engine a brief trial _____ahead and astern.

A. with power B. on power C. with air D. on air

9. A number of cylinder liners are enclosed in one cast iron casing to form a _____.

A. cylinder cover B. cylinder block C. crankcase D. bed-plate

10. Between the periods of injection and ignition of the fuel, a diesel engine crankshaft rotates through the _____.

A. detonation period B. firing period C. delay period D. advance period

11. The turbo-blower comprises a gas turbine and a _____.

A. condenser B. blower C. soot blower D. air receiver

12. Vessel propellers are classified as being right hand or left hand. A right hand propeller turns clockwise when viewed from _____.

A. the bow B. the stern C. the port side D. the starboard side

13. _____the repair in such short time is unknown to us.

A. How they finished B. How did they finished

C. That how they finished D. That how did they finished

14. In a simple mechanical governor, the _____.

A. centrifugal force rotates the ball-head

B. flyweight centrifugal force is balanced by spring force

C. flyweight centrifugal force is balanced by hydraulic pressure

D. speeder spring alone actuates the fuel control rod

15. Wear in a cylinder liner is usually due to _____.

A. friction B. abrasion C. corrosion D. all of the above

16. A governor automatically controls engine speed by regulating _____.

A. fuel supply B. firing order C. engine load D. oil level

17. If the viscosity of the liquid being transferred remains constant as the discharge pressure increases, the rotary pump

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_____.

A. capacity will increase B. capacity will decrease

C. suction pressure will increase D. suction pressure will decrease

18. The purpose of the wearing rings used in a centrifugal pump is to _____.

A. prevent an internal explosion in the pump when it is overheated

B. enable a visual inspection of the pump while it is running

C. insure a proper alignment of the pump coupling to the driver

D. accommodate for friction between the impeller and the casing

19. When a boiler is operating, the water level in the gauge glass reads _____when the boiler is shut down.

A. lower than B. higher than C. as much as D. the same as

20. The concentration of total dissolved solids in the water of an auxiliary boiler can increase as a result of _____.

A. seawater contamination B. frequent surface blows

C. dissolved oxygen deaeration D. frequent bottom blows

21. For a purifier changing to a gravity disc with smaller hole diameter will move the interface towards the _____.

A. bowl periphery B. bowl center C. upper surface D. lower surface

22. For a L.O. purifier, If the back pressure of the oil outlet is too high, the interface between oil and water in the bowl will _____.

A. be interrupted B. move downwards C. move outwards D. retain original position

23. If a bilge pump failed to build up discharge pressure, you should check for ___.

A. excessive water in the bilges B. a clogged suction strainer

C. oil in the bilges D. all of the above

24. The oil sludge is burnt in the _____onboard. I'll show you the ashes.

A. boiler B. main engine C. auxiliary engine D. incinerator

25. A class ' C' fire would most likely occur in the _____.

A. engine room bilges B. main switchboard C. paint locker D. rag bin

26. If the pump for a hydraulic anchor windlass is over heating, the cause may be _____.

A. increased pump speed B. excessive pump discharge pressure

C. too low of a tilting box angle D. low pump speed

27. The hand steering is a method by which the motion of the rudder is controlled with _____.

A. a motor-driven steering wheel B. a pneumatic steering wheel

C. a hand-driven steering wheel D. an electric steering wheel

28. An axial piston, variable stroke pump is used in a vessel's hydraulic steering gear. Under pressure, oil continually leaks out from between the valve plate/ cylinder barrel and will _____.

A. cause loss of hydraulic oil from the system

B. result in extreme damage to the pump

C. cause damage to the pump if not continually drained from the pump casing

D. result in the system high side pressure to substantially drop off

29. With reference to operating a four-ram steering gear system under emergency conditions, which one of the following statements is incorrect ?

A. Only one pump should be used at any time

B. The ship speed should be reduced to 70% of the normal

C. Watch keeping of the steering gear should be increased

D. Limitations of the steering gear should be logged but the bridge need not be informed

30. Which of the following problems could cause air to blow out through the inlet air filter of a running compressor?

A. Excessive compression in the cylinder B. A broken intake valve

C. A dirty inlet filter element D. An improperly adjusted discharge valve

31. When a refrigeration compressor is in the 'off' cycle, the thermal expansion valve will _____.

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A. always be wide open when the compressor restarts
B. continue to operate as if the system were in operation
C. remain open until evaporator pressure equalizes, then close until the compressor restarts
D. always be completely closed until the compressor restarts

32. An increasing head pressure in a refrigeration system, without any corresponding change in the cooling water inlet temperature, would probably be caused by _____.
A. restriction in refrigerant piping
B. air and non-condensable gases in the condenser
C. water in the refrigerant
D. flooding back of liquid refrigerant from the evaporator

33. In a refrigeration system, if the cooling water to the condenser fails, the _____.
A. box temperature solenoid valve will close B. expansion valve will close
C. compressor will shutdown D. king valve will open

34. The basic training in fire prevention and fire fighting should include the theoretical elements which should cover _____.
A. the three elements of fire and explosion
B. lower and upper flammable limits
C. classification of fires and applicable extinguishing agents
D. all of the above

35. Sacrificial zinc anodes are used on the saltwater side of diesel engine heat exchangers to _____.
A. reduce electrolytic action on heat exchanger metals
B. keep heat transfer surfaces shiny and clean
C. prevent rapid accumulation of marine growth
D. provide a protective coating on heat exchanger surfaces

36. To parallel an incoming machine to a running machine therefore it is necessary to ensure firstly that _____.
A. two frequencies must be brought into phase
B. the incoming machine accepts a small amount of load
C. the running machine must be unload
D. both voltages are equal

37. Self-excited a.c. generator with 'error operated' voltage control systems draw the full excitation power for the machine terminals. This dispenses with the current transformers, reactors and capacitors necessary for accurate compounding, but renders the excitation system vulnerable to variations in its output voltage. Which of the following is correct about the generator mentioned according to the sentences above?
A. It consumes no excitation power.
B. It has current transformers.
C. Components are needed for accurate compounding.
D. Its excitation system is vulnerable to voltage variations

38. Which of the following should be the FIRST step in removing a generator from parallel operation?
A. Trip the generator off the switchboard.
B. Turn off all electrical equipment.
C. Remove the load from the 'off going' generator.
D. Increase the cycles of the generator staying on the line.

39. This arrangement is _____if the elements are directly connected to one another and the control action takes place without human involvement.
A. a manual closed loop B. a manual opened loop
C. an automatic closed loop D. an automatic opened loop

40. The viscosity regulator controls the fuel oil temperature _____provide oil at the correct viscosity for combustion.

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A. in order that B. because of C. in order to D. owing to

41. _____is a precaution which contributes to avoiding trouble under normal operating conditions.

A. Constant inspection B. Keeping constant load

C. Remaining constant temperature D. varying speed

42. To repair a small electrical motor that has been submerged in saltwater, you should _____.

A. wash it with fresh water and apply an external source of heat

B. renew the windings

C. send it ashore to an approved service facility

D. rinse all electrical parts with a carbon tetrachloride cleaning solvent and then blow dry the motor with compressed air

43. The diesel engine consumes considerably less fuel than the steam engine for equal output, _____enables a motor-ship to load more cargo.

A. why B. which C. in which D. on which

44. The conclusion that mechanical efficiency is always _____100 per cent is correct.

A. small than B. more than C. little than D. less than

45. The diesel engine valve subjected to most severe conditions of service is the _____.

A. cylinder exhaust valve B. air starting valve C. air inlet valve D. cylinder relief valve

46. One cylinder of a diesel engine is persistently knocking and does not cease when the fuel supply to that cylinder is secured. Which of the following problems may be the cause?

A. Low loading of the cylinder. B. Excessive cooling of that piston.

C. Sluggish ring action on the piston. D. A mechanical defect in a working part.

47. A diesel engine is operating with excessively high exhaust temperatures at all cylinders. To correct this condition, you should first _____.

A. reduce the engine load B. increase the cooling water flow

C. increase the lube oil pressure D. adjust the fuel rack

48. High exhaust temperature and black smoke exhausting from an auxiliary diesel engine can be caused by _____.

A. engine overload B. low combustion temperature

C. plugged fuel nozzle holes D. excessive compression pressure

49. Hearing a strong noise, _____at once.

A. the engine stopped B. the engine was stopped

C. he stopped the engine D. he had stopped the engine

50. To correct a hunting problem in a main propulsion diesel engine hydraulic governor, you should _____.

A. increase the governor oil pressure B. adjust the speed droop setting

C. adjust the speeder spring travel D. adjust the compensating needle valve

51. The reciprocating pump can't draw water from a tank may be caused by _____.

A. leaky pipe B. opened inlet valve C. too much water in tank D. None of the above

52. Diesel engine exhaust temperatures may be used to indicate _____.

A. leaking exhaust valves B. an overloaded cylinder

C. a clogged injector nozzle D. all of the above.

53. It is well known that the whole power distribution of the ship's electrical services mainly depend on the _____.

A. sub-boards B. main switchboards C. emergency switchboards D. distribution boards

54. A main propulsion diesel engine is normally shut down by _____.

A. shutting off the air supply B. over-speeding the engine

C. securing the fuel supply D. securing the ignition system

55. Oil mist detectors are usually used on board to detect oil mist density within _____.

A. the engine crankcase B. the engine scavenge boxes C. drain tanks D. fuel tanks

56. The resistance of electric wire will decrease as its _____.

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A. length increases B. cross-sectional area increases
C. temperature increases D. percent of metallic purities increases

57. Tools with _____handles should be used to check electric circuit.
A. plastic B. metal C. stainless steel D. copper

58. Within the cycle of a forced circulation auxiliary water-tube boiler, part of the water flashes into steam, and the remaining hot water is _____.
A. collected in the lower portion of the steam accumulator for re-circulation back to the heating coil or water tank
B. returned to the lower drum via down-comers due to density difference for reheating
C. passes through the domestic heating system return line steam traps to the auxiliary feed supply tank
D. automatically dumped into auxiliary feed heater and reheated by auxiliary exhaust back pressure

59. _____is considered to be one of the detainable deficiencies under the STCW Convention.
A. Absence, substantial deterioration or failure of proper operation of the cargo deck area fire protection on tanker
B. Absence, non-compliance or serious deterioration of lights, shapes or sound signal
C. Absence or failure of proper operation of the radio equipment for distress and safety communication
D. Absence in a watch of a person qualified to operate equipment essential to safe navigation, safety radio communications or the prevention of marine pollution

60. When the machinery spaces are in the periodic unmanned condition, _____shall be immediately available and on call to attend the machinery space.
A. the chief engineer
B. the designated engineer from shipyard
C. the designated duty officer in charge of the engineering watch
D. the designated surveyor from classification society

61. A fire involving trash and paper waste would be classified as a _____.
A. class A B. class B C. class C D. class D

62. Tell your men _____the rules and procedures of working when dismantling the equipment.
A. not to go against B. don't go against C. not go to against D. to not go against

63. Before you begin administering artificial respiration ,you should be sure the victim _____.
A. is comfortable B. is warm C. is not bleeding D. has a clear airway

64. During fueling operations, which of the listed precautions should be taken when topping off fuel tanks?
A. Reduce the pumping rate by closing the deck filling valve.
B. Close all overflow valves.
C. Place 5 gallon containers under all flange connections in the fuel line.
D. Reduce the pumping rate and sound tanks frequently as the level rises.

65. Which of the listed classes of fire would most likely occur in the engine room of a vessel?
A. Classes A and B B. Classes B and C C. Classes C and D D. Classes A and D

66. The possibility of damage from operating a diesel engine at critical speeds is reduced by the use of _____.
A. an isochronous governor B. elastic engine mounts
C. a vibration damper D. a cast iron bed plate with good flexible qualities

67. Engines for lifeboats are required to have sufficient fuel to operate for how many hours?
A. 6 hours B. 12 hours C. 18 hours D. 24 hours

68. The term "moderate speed" was previously interpreted as meaning a speed which would enable a vessel _____within half the range of visibility.

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A. stopping B. being stopped C. to stop D. to be stopped

二、关联题（每组关联题题干下有 4 个小题，每小题 4 个选项）

第一组：

The main purpose of the new chapter is to make the International Safety Management (ISM) Code mandatory. By adding the ISM Code to SOLAS it is intended to provide an international standard for the safe management of ships and for pollution prevention.

The ISM Code establishes safety management objectives which are: to provide for safe practices in ship operation and a safe working environment; to establish safeguards against all identified risks; to continuously improve safety management skills of personnel, including preparing for emergencies.

The Code requires a safety management system (SMS) to be established by "the Company", which is defined as the ship-owner or any person, such as the manager or bareboat charterer, who has assumed responsibility for operating the ship. This system should be designed to ensure compliance with all mandatory regulations and that codes, guidelines and standards recommended by IMO and others are taken into account.

The SMS in turn should include a number of functional requirements: a safety and environmental protection policy; instructions and procedures to ensure safety and environmental protection; defined levels of authority and lines of communication between and amongst shore and shipboard personnel; procedures for reporting accidents, etc.; procedures for responding to emergencies; procedures for internal audits and management review.

The Company is then required to establish and implement a policy for achieving these objectives. This includes providing the necessary resources and shore-based support. Every company is expected "to designate a person or persons ashore having direct access to the highest level of management".

69. The new chapter of the SOLAS is mainly on _____.

A. the watch-keeping standards for seafarers B. the certification standards for seafarers

C. the ISM Code D. the training standards for seafarers

70. The safety management objectives of the ISM Code are _____.

A. to provide for safe practices in ship operation and a safe working environment

B. to establish safeguards against all identified risks

C. to continuously improve safety management skills of personnel, including preparing for emergencies

D. all the above

71. The term "the Company" in the ISM Code is defined as _____.

A. the ship-owner B. any person who has assumed responsibility for operating the ship

C. either A or B D. neither A nor B

72. The “person” in the phrase "to designate a person or persons ashore having direct access to the highest level of management" refers to _____.

A. the manager of the shipping company B. the master of the ship

C. the designated person on board ship D. the designated person ashore

第二组：

The electrical remote control system is commonly used in modern steering installations since it uses a small control unit as transmitter on the bridge and is simple and reliable in operation.

The control box assembly is mounted on the steering gear. Movement of the bridge transmitter results in electrical imbalance and current flow to the motor in the control box. The motor drives, through a flexible coupling, a screw shaft, causing it to turn. A screw block on the shaft is moved and in turn moves the floating lever to which a control rod is attached. The control rod operates the slipper ring or swash plate of the variable delivery pump. A cut-off lever connected to the moving tiller will bring the floating lever pivot and the lever into line at right angles to the screw shaft axis. At this point the rudder angle will match the bridge lever angle and the pumping action will stop. For local manual control, the electrical control is switched off and a small hand-wheel is connected to the screw shaft. Rotation of the hand-wheel will

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move the floating lever and bring about rudder movement as desired.

73. This passage is mainly on _____.

A. the electrical remote control of main engines

B. the electrical control equipment of steering gears

C. the bridge remote control of main engines

D. the control box assembly in steering gear compartment

74. The advantage of the control equipment is _____.

A. that the transmitter is on the bridge

B. that local manual control can be achieved.

C. that remote control cab be achieved.

D. simple in construction and reliable in operation

75. The function of the cut-off lever is _____.

A. to provide electrical signal B. to provide feed-back

C. to provide local manual control D. to provide right rudder angle

76. Another name for the “swash plate” in the variable delivery pump is _____.

A. tiltable disc B. gravity disc C. distributing disc D. catch plate

中华人民共和国海事局

2005 年第 3 期海船船员适任证书全国统考试题(总第 38 期)

科目：轮机英语 试卷代号：803

适用对象：无限、近洋航区 3000KW 及以上船舶大管轮

（本试卷卷面总分 100 分，及格分为 70 分，考试时间为 100 分钟）

答题说明：请选择一个最合适的答案，并将该答案按答题卡要求，在其相应位置上用 2B 铅笔涂黑。第 1 题至 68 题，每题 1 分，第 69 题至 76 题，每题 1.5 分,第 77 题至 78 题，每题 10 分。

二、 单项选择题：

1. Which one is connected to the piston?

A. cylinder B. connecting rod C. thrust shaft D. crank shaft

2. The trouble-free life of an engine indicates_____.

A. the period of time during which no trouble occurs to the engine

B. no trouble will occur to the engine all its life

C. trouble may occur freely to the engine

D. no matter what you do to the engine, no trouble will occur during this period

3. Additives _____protective layers on metal surfaces guarding them against corrosion.

A. damage B. form C. dissolve D. contaminate

4. Machinery driving fuel oil transfer and fuel oil service pumps must be fitted with a remote means of stopping the machinery from _____.

A. within the space concerned B. outside the space concerned

C. the throttle station D. within the fire room

5. In some designs the cylinder oil is timed so that the oil injects only on the_____.

A. piston crown B. piston groove C. piston skirt D. piston ring belt

6. Which of the processes listed consumes the greatest amount of power while producing the greatest amount of heat?

A. Overcoming sliding friction B. Overcoming rolling friction

C. Overcoming fluid friction D. Overcoming oil wedge friction

7. _____provide the water to the pistons.

A. Pneumatic pipes B. Hydraulic pipes C. Telescopic pipes D. Operating gas pipes

8. According to the way the energy of the exhaust gases is utilized, pressure-charging can be divided into two main

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systems, namely, the constant-pressure system and _____.

A. the pulse-phase system B. the pulse Doppler system

C. the pulse system D. the pulse interval

9. Vee-type engines have the connecting rods from two cylinders connected to each _____of the crankshaft.

A. throw B. web C. main bearing D. deflection

10. _____ the bodies are, _____the friction will be.

A. The smoother/the greater B. Smoother/less C. The rougher/the greater D. Rougher/greater

11. The engine speed at which resonance can occur is termed _____.

A. maximum speed B. full speed C. sea speed D. critical speed

12. A crankshaft whose center of gravity coincides with its center line is said to be_____.

A. dynamically balanced B. statically balanced C. counter balanced D. resonantly balanced

13. _____ the repair in so short a time is unknown to us.

A. How they finished B. How did they finished

C. That how they finished D. That how did they finished

14. The principle of hydrostatic lubrication has been applied to the cross-head using_____.

A. high pressure lubricators B. tie rods C. fuel injectors D. fuel valves

15. Load control on a diesel engine is accomplished by_____.

A. regulating the speed of the turbocharger

B. rotating the fuel injector pump plunger

C. regulating the speed of the fuel oil transfer pump

D. changing engine timing

16. A reduction in load on a diesel engine results in _____of speed of the crankshaft.

A. a reduction B. an increase C. an outing D. a downwards

17. Which of the listed statements is correct concerning the starting of centrifugal pumps?

A. They should always be started with the discharge valve closed.

B. They should always be started with the discharge valve opened.

C. A priming pump is always required to flood the impeller suction.

D. They should always be started with the sealing line valves closed.

18. The _____discharge a nearly constant amount of liquid regardless of pressure.

A. mixed-flow pump B. axial-flow pump C. centrifugal pump D. displacement pump

19. In an auxiliary boiler steam and water system, the highest pressure will be in the _____.

A. steam stop valve B. dry pipe C. feedwater system D. generating tubes

20. The rate of heat transfer in a water-tube auxiliary boiler can be increased by _____.

A. operating the boiler at less than normal water level

B. installing fins on the firesides of water-tubes

C. increasing the amount of excess air to the burners

D. treating the boiler water with chemical oxygen scavengers

21. High-speed rotation in a centrifugal purifier can produce a force_____ the force of gravity.

A. many thousand times larger than B. the same as

C. many thousand times smaller than D. none of the above

22. When in operation, it is unavoidable that a small amount of oil _____through leakage, and in order to compensate for these leaks the system is connected to a feed pump.

A. escapes B. overheats C. expands D. accelerates

23. Grease the roller bearings with H.P. gun . In the sentence "H.P." means_____.

A. horse power B. high pressure compressor C. hand pump D. high pressure

24. The oil sludge is burnt in the _____onboard. I'll show you the ashes.

A. boiler B. main engine C. auxiliary engine D. incinerator

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25. The term ‘ discharge ’ , as it applies to the pollution regulations, means _____.
A. spilling B. leaking C. dumping D. all of the above
26. When normal operating pressure is applied to the hydraulic oil used in a high-pressure system, the oil _____.
A. viscosity will decrease B. volume will increase
C. volume will decrease D. pour point will be reduced
27. _____are used for hauling in or letting out the wires which fasten the ship to the shore.
A. Cargo winches B. Mooring winches C. Windlasses D. Cargo hatches
28. Which of the following hydraulic systems is not one of the three sub-division of the hydraulic drive system?
A. constant pressure system B. variable pressure system
C. variable displacement system D. constant volume system
29. With reference to rules governing steering gear, which one of the following rules is incorrect ?
A. It is required that all ships are provided with two independent steering gear systems that is one main and one auxiliary.
B. The auxiliary gear could be power operated in passenger ships.
C. The auxiliary gear must be of adequate strength and sufficient to steer a ship at navigable speed.
D. All moving parts of the steering gear must be guarded against any possible damage.
30. Broken valve strips in an operating low pressure, air compressor will cause _____.
A. an immediate crankcase explosion B. oil contamination in the compressed air
C. a decrease in compressor capacity D. no immediate loss of the compressed air capacity
31. Condensate must be drained from the intercooler and after-coolers of an air compressor because _____.
A. the cooling effect of the condensate reduces the compressor's efficiency
B. a danger of explosion exists whenever water is present in a compressor
C. water causes erratic operation of pneumatic components
D. the volumetric capacity of the first stage is reduced if water remains
32. If the head pressure of a reciprocating refrigeration compressor is excessive, _____.
A. the relief valve should open before the high pressure cutout
B. the relief valve should open and allow the excess refrigerant to flow to the receiver
C. the high pressure cutout switch should operate before the relief valve opens
D. you should close the suction valve
33. Sludge may form in the crankcase of an air conditioning compressor as a result of _____.
A. bubbling refrigerant B. overheating and oxidation
C. lowered operating temperatures D. reducing the cloud or flash point
34. A feeler or thermal bulb is used for the expansion valve to _____.
A. detect the temperature B. detect the pressure
C. heat the refrigerant D. accelerate the refrigerant
35. The dew point of air is reached when the wet bulb temperature is _____.
A. twice the dry bulb temperature B. 10℃ above the dry bulb temperature
C. 5℃ above the dry bulb temperature D. equal to the dry bulb temperature
36. _____ is used to produce electric power.
A. An alternator B. A fresh water generator C. A compressor D. A clarifier
37. In order to change the direction of rotation of a D.C. motor _____.
I. the field leads must be changed ; II. the input leads must be changed
A. I only B. II only C. either I or II D. neither I or II
38. Which of the following should be the FIRST step in removing a generator from parallel operation?
A. Trip the generator off the switchboard.
B. Turn off all electrical equipment.

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C. Remove the load from the 'off going' generator.

D. Increase the cycles of the generator staying on the line.

39. There is a danger of the starting current _____that the windings are burnt out.

A. to increase B. to be so increased C. increased D. being so increased

40. The viscosity regulator controls the fuel oil temperature _____ provide oil at the correct viscosity for combustion.

A. in order that B. because of C. in order to D. owing to

41. When there is a fire in a large electric motor, normally the very FIRST step is to _____.

A. secure the electric supply B. ventilate area to remove smoke

C. start the fire pump and lead out hose D. apply foam

42. Engine protection by means of an alarm or shutdown control can be obtained with devices that are sensitive to _____.

A. temperature B. pressure C. engine speed D. all of the above

43. With UMS, when the engine room is unwatched _____will control the main engine.

A. the bridge officer on watch B. the chief engineer

C. the duty engineer D. the duty motorman

44. The correct tightening is obtained by use of _____to measure the extension given to the bolts.

A. pressure gauges B. stretch gauges C. thermometers D. bridge gauges

45. A main propulsion diesel engine is normally shut down by _____.

A. shutting off the air supply B. over-speeding the engine

C. securing the fuel supply D. securing the ignition system

46. One cylinder of a diesel engine is persistently knocking and does not cease when the fuel supply to that cylinder is secured. Which of the following problems may be the cause?

A. Low loading of the cylinder. B. Excessive cooling of that piston.

C. Sluggish ring action on the piston. D. A mechanical defect in a working part.

47. Poor combustion in a diesel engine can be caused by _____.

A. reduce the engine load B. increase the cooling water flow

C. increase the lube oil pressure D. adjust the fuel rack

48. If fuel injection to a four-stroke/cycle diesel engine begins earlier than designed, ignition may be delayed because the _____.

A. cylinder compression pressure may not be high enough

B. cylinder compression temperature may be too high

C. fuel oil injection pressure may not be high enough

D. scavenge and purge process is incomplete

49. Diesel engine automated control systems may utilize sensing devices of dual function, with sensing ranges providing both alarm and engine shut down capability. Which of the key points listed would only require an alarm sensor?

A. Lube oil pressure and temperature. B. Jacket water pressure and temperature.

C. Engine over-speed. D. Lube oil sump level.

50. Fix the fuel injector into _____after repair.

A. the cylinder liner B. the cylinder cover C. the cylinder jacket D. the piston

51. Lower suction pressure of a pump may be caused by _____.

A. too much air in the pipe line B. closed inlet valve C. empty tank D. leaky pipe

52. Diesel engine exhaust temperatures may be used to indicate _____.

A. leaking exhaust valves B. an overloaded cylinder

C. a clogged injector nozzle D. all of the above

53. Shims of different thicknesses are inserted between the shells to enable adjustment of _____.

A. the bearing clearances B. the bearing thickness

C. the bearing strength D. the bridge hardness

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54. Oil mist detectors are usually used on board to detect oil mist density within _____.
A. the engine crankcase B. the engine scavenge boxes C. drain tanks D. fuel tanks
55. Tools with _____handles should be used to check electric circuit.
A. plastic B. metal C. stainless steel D. copper
56. It is well known that the whole power distribution of the ship's electrical services mainly depend on the _____.
A. sub-boards B. main switchboards C. emergency switchboards D. distribution boards
57. The _____is used to measure current.
A. ammeter B. voltmeter C. wattmeter D. frequency meter
58. If the jacket water temperature of an operating diesel engine suddenly rises above normal, the cause can be attributed to _____.
A. an overfilled expansion tank
B. excess chromate(铬酸盐) treatment of the jacket water
C. a clogged raw water sea suction
D. cavitation erosion of the heat exchanger tubes
59. The Company should ensure that _____involved in the Company's SMS have an adequate understanding of relevant rules, regulations, codes and guidelines.
A. masters B. chief engineers C. crew D. personnel
60. Routine monitoring of a diesel engine should include _____.
A. checking for leaks B. checking temperatures and pressures
C. listening for abnormal noises D. all of the above.
61. If your vessel has a starboard list after taking on fuel, you would transfer fuel _____.
A. to starboard B. to port C. forward D. aft
62. The conventions under which the port state control inspection is carried out include all the following except _____.
A. SOLAS 74 B. MARPOL 73/78 C. STCW 78/95 D. ISM Code
63. _____may have two emergency source of power, thus requiring two emergency switchboards.
A. Large passenger vessels B. General cargo ships
C. Container ships D. Oil tankers
64. Tell your men _____the rules and procedures of working when dismantling the equipment.
A. not to go against B. don't go against C. not go to against D. to not go against
65. Which of the followings is least likely to cause the ignition of fuel vapors?
A. Static electricity B. An open running electric motor
C. Loose wiring D. Explosion proof lights
66. The term ' proper metering ', as applied to a diesel fuel injection system, can be best defined as _____.
A. delivering the same quantity of fuel to each cylinder for each power stroke according to engine load
B. maintaining the metering adjustment for a reasonable period under all load conditions
C. timing fuel injection to obtain maximum power and good fuel economy
D. distributing the fuel to all parts of the combustion chamber for proper combustion
67. Administrations should bear in mind the significance（重要性） of _____in maintaining safety of life and property at sea and in preventing marine pollution.
A. advanced nautical equipment B. advanced performance main engines
C. emergency equipment D. communication and language skills
68. During inspection of the machinery space, which of the following statements points to an unsatisfactory organization of the systematic maintenance?
A. missing valve hand wheels B. dirty tank tops
C. a large number of temporary repairs D. All of the above.

三、 关联题（每组关联题题干下有 4 个小题，每小题 4 个选项）

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第一组：

The cylinder cover is made of cast iron and is provided with two inlet valves, two exhaust valves, a central mounted fuel injection valve and an indicator valve. The inlet valves are mounted with separate seating rings made of special heat-resistant cast iron. These rings are pressed into the cylinder cover in cooled conditions. The exhaust valve seatings are special, water-cooled seating rings. These rings are also pressed into the cylinder cover in cooled conditions.

Each cylinder cover is provided with cooling water from a screwed -on tubular cooling water jacket through radial bores in the thick bottom of the cover. Each of the radial bores is connected to two side bores. The cover has further separate bores that lead to the cooling water jacket and the bores in the cylinder cover to a common outlet chamber. The cylinder cover and cylinder liner are assembled by means of four threaded studs screwed into the frame. Tightening is effected by means of hydraulic tools, and sealing by means of a thin ring mounted between the cylinder cover and the cylinder liner. A starting valve is mounted on the side of the cylinder cover.

The engine has oil-cooled pistons of cast iron. The pistons are provided with three compression rings and a spring-loaded scraper ring. A space for cooling oil is provided at the top of the piston.

The scraper ring prevents lubricating oil from being drawn up into the combustion chamber.

Oil for cooling the piston crown is led from a bore in the crankshaft through a channel in the connecting rod and the connecting rod journal, to the bushing for the gudgeon pin. This bushing is provided with an annular groove from which part of the oil is led for lubricating the gudgeon pin. The remaining oil continues through bores in the gudgeon pin and the piston to piston cooling chamber.

69. This passage is mainly about _____.

A. cylinders and cylinder covers B. cylinders and pistons

C. cylinder covers and pistons D. cylinders and oil

70. Which of the following may be provided on top of the cylinder cover?

A. two exhaust valves B. a starting valve C. an indicator D. all of the above

71. Which of the following is true?

A. The inlet valve seating rings are of heat-resistant cast steel.

B. There are six studs by which the cylinder cover and liner are tightened.

C. The exhaust valve seatings are cooled by water.

D. A copper ring is mounted between the cylinder cover and the liner.

72. Which of the following is NOT true?

A. The pistons are cooled by oil.

B. Four piston rings are fitted to each piston.

C. The scraper ring scrapes the oil downwards.

D. The piston cooling is of splash type.

第二组：

Beck Smith, a PSCO from Port Hamburger, is carrying out an inspection in the machinery space of M/V SUN. Here is a dialogue between the PSCO and the Chief engineer.

PSCO: Chief engineer, your escape route marked in arrows at stairs, or corridors to emergency exit should be clearly sighted in dark. These marks should be smeared in fluorescence（荧光） in order to evacuate when lighting is cut off.

Chief Engineer: OK, I will rectify this as quickly as possible.

PSCO: One more, your pumping line may slightly leak oil

Chief Engineer: No. Our pumping line has no trouble at all.

PSCO: Trust me. I have served Chief Engineer for many years. There is somewhere leaking oil.

Chief Engineer: How do you know?

PSCO: Oil tank bottom is very clean but with oily brightness. Significantly, you prepared for PSC inspection for quite a long time. As leaking oil, you cleaned second time just now.

Chief Engineer: You are very smart! Yes, one small place leaked oil and I planned to fix it after PSC inspection because time is limited.

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PSCO: Let me check the leaking oil place and assist you to find out a solution.

Chief Engineer: Thanks.

PSCO: According to your record, you have used oily water separator to handle oily water. I found your inlet valve of the machine is dry and rusty. I suspected that your record is untrue. Where is your 50 tons oily water? Did you pump out in high seas?

Chief Engineer: We pumped into another ship.

PSCO: What is the ship's name/call sign or another identification?

Chief Engineer: I forgot.

PSCO: You can't tell the ship's name, call sign. And 50 tons of oily water were missing. But your engine log book was recorded to pump out water with handling of oil purifier. Obviously, your record is not right. And you pump out oily water in high seas. In compliance with MARPOL 73/78 Convention you must pay a fine

73. What about the evacuation route in the engine room of M/V SUN?

A. There is no evacuation route in the engine room.

B. The escape route is not marked in arrows at stairs or corridors to emergency exit.

C. The escape route can be clearly sighted in dark.

D. The escape marks are not smeared in fluorescence.

74. Which of the following is TRUE according to the dialogue?

A. There is no trouble with the pumping line.

B. The oil tank bottom is very clean without any oily brightness.

C. The engine room officers and ratings do not care for the PSC at all.

D. The PSCO used to be a Chief Engineer.

75. How did the PSCO determine the ship pumped out the oily water overboard?

A. The oily water separator has not been used for a long time.

B. The inlet valve of the oily water separator is dirty.

C. The oily water separator is inoperative

D. There is not any record in the engine room log book

76. The word "fine" in the last sentence means _____.

A. happiness B. kindness C. small piece D. money

中华人民共和国海事局

2006 年第 1 期海船船员适任证书全国统考试题(总第 39 期)

科目：轮机英语 试卷代号：803

适用对象：无限、近洋航区 3000KW 及以上船舶大管轮

（本试卷卷面总分 100 分，及格分为 70 分，考试时间为 100 分钟）

答题说明：请选择一个最合适的答案，并将该答案按答题卡要求，在其相应位置上用 2B 铅笔涂黑。第 1 题至 68 题，每题 1 分，第 69 题至 76 题，每题 1.5 分,第 77 题至 78 题，每题 10 分。

四、 单项选择题：

1. The thermal energy produced by an internal combustion engine is transformed into _____.

A. combustion energy B. internal energy

C. external energy D. mechanical energy

2. _____became oval , it should be machined .

A. The upper half of cross-head bearing

B. The cross-head pin

C. The cross-head bearing

D. The cross-head guide plate

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3. When considering the lowest fuel system operating temperature, _____are important.
A. specific gravity or relative density
B. open flash point and closed flash point values
C. higher calorific and lower calorific values
D. cloud point and pour point values
4. When the fuel oil is burning in the combustion chamber, it _____.
A. gives up large amount of heat B. gives off large amount of heat
C. gives up large amount of steam D. gives off large amount of steam
5. Now that the valve is not worth _____. I suggest it _____.
A. to repair/renewing B. repairing/renewing
C. to repair/ be renewed D. repairing/be renewed
6. The tendency for lubricating oil to thin out at high temperature and thicken at low temperature will be characterized by a _____.
A. low viscosity index B. high viscosity index
C. high neutralization number D. low demulsibility((抗乳化性) quality
7. The centrifuge, settling tanks and _____are used to clean fuel oil.
A. balance tank B. storage tank C. service tank D. filters
8. Which of the following actions should be taken if during a routine maintenance inspection of a centrifugal pump, localized scoring on a pump shaft sleeve is detected?
A. Correct the cause of the scoring and repair the sleeve or replace with a new one.
B. Reassemble the unit and provide more water leak off for proper lubrication.
C. Check for parallel alignment of the sleeve radial faces to the sleeve bores.
D. Reassemble the unit and adjust the governor to obtain a slower speed.
9. A hot air start pipe indicates that there is _____.
A. inefficient cooling B. a leaking air start valve
C. a clogged drain valve D. a leaking air bottle
10. A restricted air intake to a diesel engine may result in the engine _____.
A. failing to reach rated speed
B. knocking under maximum load
C. hunting or surging under light load
D. overspeeding and running away
11. The turbo-blower comprises a gas turbine and a _____.
A. condenser B. blower C. soot blower D. air receiver
12. Some vessels are equipped with a water lubricated stern tube. When at sea, operating under normal conditions, the water service valve from the ship's saltwater system to the bearing should be _____.
A. closed, and no leakage permitted across the shaft packing
B. closed, and only slight leakage permitted across the shaft packing
C. opened, and no leakage permitted across the shaft packing
D. opened, and only slight leakage permitted across the shaft packing
13. Although lube oils used in the main lubricating service systems should have a relatively high flash point to avoid ignition, they can create smoke and fire hazards when they _____.
A. are exposed to a vacuum
B. come in contact with extremely hot surfaces
C. are reduced in temperature to just above the pour point
D. become extremely agitated（激动的） or aerated (充气、通风)
14. An increase in load on a diesel engine results in _____of speed of the crankshaft.
A. a reduction B. an increase C. an outing D. a downwards

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15. We can control the speed of the engine by _____the quantity of oil supplied.
A. exchanging B. regulating C. adjusting D. differing from
16. Wear in parts of exhaust valve operation gear will tend to _____the tappet clearance.
A. increase B. reduce C. rise D. reduction.
17. The most suitable pump for oily water separator feed duties is_____.
A. a reciprocating pump B. a vane pump
C. a centrifugal pump D. a triple screw pump
18. A centrifugal pump vibrates excessively during operation. Upon disassembling the pump it is found that the impeller is out of balance. Without an available spare, you should _____.
A. drill holes through the heavy side of the impeller until it balances
B. weld counterweights（平衡物） to the light side of the impeller
C. remove metal from the heavy side by machining in a lathe
D. acid wash and scrape the heavy side until it balances
19. Improper maintenance of an automatic auxiliary boiler oil burner could result in _____.
A. fuel pump failure
B. fan motor failure
C. increased feed-water consumption
D. decreased boiler efficiency
20. In readying an auxiliary water-tube boiler for a routine hydrostatic test, which of the following procedures should be undertaken prior to filling the boiler with fresh water?
A. The safety valve escape piping should be disconnected from the valve body and a blank inserted
B. The boiler vent valves should be opened
C. All hand-hole/manhole covers should be tightened up as much as possible to preclude any leaks
D. All of the above
21. Diesel engine fuel oil leakage should be drained and additional precautions provided to _____.
A. return this oil to the proper storage tank
B. prevent contamination of lubricating oil by fuel oil
C. ascertain an accurate measurement of this leakage
D. drain cooling water system components
22. The operating water is supplied under the _____of an oil separator.
A. sliding bowl bottom B. bowl hood C. bowl D. filter units
23. An oil water monitor is required in order to measure _____.
A. the oil content in water B. the water content in fuel oil
C. the water level in bilge well D. the oil level in bilge well
24. The clutch band of a constant tensioning mooring winch must be set up tight enough to drive the winch drum and should slip only when _____.
A. excessive loads are placed on the winch
B. minimum pull is being exerted by the winch
C. automatic operation of the winch is desired
D. wire is being retrieved at the maximum rate
25. A class ‘ C' fire would most likely occur in the _____.
A. engine room bilges B. main switchboard C. paint locker D. rag bin
26. What color is used to indicate the last shot of anchor chain?
A. Red B. White C. Blue D. Yellow
27. The hand steering is a method by which the motion of the rudder is controlled with _____.

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A. a motor-driven steering wheel B. a pneumatic steering wheel
C. a hand-driven steering wheel D. an electric steering wheel

28. If the relief valve on the discharge side of a hydraulic pump lifts, the cause could be _____.
A. a low load on the unit
B. a clogged pump suction strainer
C. a blockage in the line between the pump and hydraulic motor
D. the hydraulic motor turning too fast

29. In the hydraulic system, _____ is the power unit.
A. oil pump B. control valve C. hydraulic motor D. fittings

30. Excessively low air pressure occurring in the intercooler of a reciprocating air compressor is caused by _____.
A. leaky discharge valves on the LP cylinder
B. leaky discharge valves on the HP cylinder
C. insufficient intercooler cooling
D. low ambient air pressure

31. Which of the following statements is true concerning any evaporator?
A. High conductivity of the distillate indicates distillate salinity is excessive.
B. Increasing the absolute pressure of the shell will increase the distiller's capacity.
C. Mesh separators are used in evaporators to filter the distillate.
D. Reducing the brine density will reduce the heat lost overboard.

32. Sweating of the refrigeration system compressor crankcase is caused by _____.
A. too much superheat B. insufficient superheat
C. suction pressure too low D. excessive refrigerant returning to the compressor

33. Sludge may form in the crankcase of an air conditioning compressor as a result of _____.
A. bubbling refrigerant B. overheating and oxidation
C. lowered operating temperatures D. reducing the cloud or flash point

34. Which of the listed problems could produce a high absolute pressure within a flash type evaporator?
A. production of high salinity distillate
B. seawater feed temperature below 165℃
C. a leak in the first stage demister
D. a cracked distillate pump vent line

35. Increasing the moisture content of conditioned air is known as _____.
A. moisturizing B. dehumidification C. dampening D. humidification

36. To increase the frequency of an operating AC generator, you should _____.
A. increase the field excitation
B. decrease the field excitation
C. increase the number of magnetic poles
D. increase the speed of the prime mover

37. An alternator switchboard has a synchroscope and synchronizing lamps. If the synchroscope is broken, which of the steps listed is the most essential before an alternator can be paralleled with the bus?
A. The breaker should be closed when one synchronizing lamp is dark and the other is bright.
B. The breaker should be closed when both synchronizing lamps are bright.
C. The frequency meter should be used to determine that the incoming alternator frequency is slightly higher than the bus.
D. A portable phase sequence indicator must be used to verify the information from the lamps.

38. The most important factor in engine performance is the actual power output at the end of the crankshaft available for

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doing work. This is known as _____.

A. indicated horsepower B. brake horsepower C. net horsepower D. friction horsepower

39. Temperature measurement by instruments will give a value in degree Celsius. This scale of measurement is normally used for all readings and temperature values _____dealing with theoretical calculations involving the gas laws.

A. in addition to B. in addition that C. except that D. except when

40. The viscosity regulator controls the fuel oil temperature _____provide oil at the correct viscosity for combustion.

A. in order that B. because of C. in order to D. owing to

41. Which of the listed items will stop a motor due to a reduction in voltage and restart it when the voltage is restored to normal?

A. Low voltage protection circuit B. Non-renewable link fuse

C. Renewable link fuse D. Low voltage release circuit

42. A circuit breaker and a fuse have a basic similarity in that they both _____.

A. can be reset to energize the circuit

B. should open the circuit when overloaded

C. will burn out when an over current flow develops

D. all of the above

43. Remote control means that _____.

A. the system is manned manually

B. the system is situated remotely from the operator

C. the system is controlled automatically

D. all the above

44. Shims of different thicknesses are inserted between the shells to enable adjustment of _____.

A. the bearing clearances B. the bearing thickness

C. the bearing strength D. the bridge hardness

45. In a diesel engine, an extremely leaking exhaust valve can cause _____.

A. misfiring B. pre-ignition C. interrupted scavenging D. reduced scavenging

46. One cylinder of a diesel engine is persistently knocking and does not cease when the fuel supply to that cylinder is secured. Which of the following problems may be the cause?

A. Low loading of the cylinder. B. Excessive cooling of that piston.

C. Sluggish ring action on the piston. D. A mechanical defect in a working part.

47. A diesel engine is operating with excessively high exhaust temperatures at all cylinders. To correct this condition, you should first_____.

A. reduce the engine load B. increase the cooling water flow

C. increase the lube oil pressure D. adjust the fuel rack

48. Any increase in the exhaust back pressure of a four-stroke/cycle diesel engine will _____.

A. reduce engine horsepower output

B. aid in silencing the exhaust noise

C. increase the mean effective pressure

D. contribute to effective cylinder scavenging

49. Hearing a strong noise, _____at once.

A. the engine stopped B. the engine was stopped

C. he stopped the engine D. he had stopped the engine

50. Fix the fuel injector into _____after repair.

A. the cylinder liner B. the cylinder cover

C. the cylinder jacket D. the piston

51. The reciprocating pump can't draw water from a tank may be caused by _____.

A. leaky suction pipe B. opened inlet valve

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C. too much water in tank D. None of the above

52. Diesel engine exhaust temperatures may be used to indicate _____.

A. leaking exhaust valves B. an overloaded cylinder _____.

C. a clogged injector nozzle D. all of the above.

53. Oil mist detectors are usually used on board to detect oil mist density within _____.

A. the engine crankcase B. the engine scavenge boxes

C. drain tanks D. fuel tanks

54. The resistance of electric wire will decrease as its _____.

A. length increases B. cross-sectional area increases

C. temperature increases D. percent of metallic purities increases

55. When starting a reciprocating pump, the discharge valve should be _____.

A. closed B. opened fully C. cracked open D. partly open

56. For the proper control of the air temperature in an air conditioning system using chilled water circulation, which of the listed conditions should remain constant regardless of load changes?

A. Chilled water system supply temperature.

B. Chilled water system return temperature.

C. Compressor discharge temperature.

D. Compressor suction pressure..

57. Tools with _____handles should be used to check electric circuit.

A. plastic B. metal C. stainless steel D. copper

58. It is well known that the whole power distribution of the ship's electrical services mainly depend on the _____.

A. sub-boards B. main switchboards

C. emergency switchboards D. distribution boards

59. In order to ensure the safety of the ship and its equipment during UMS operation, certain essential functions _____.

A. must be provided B. may be provided C. have provided D. can be provided

60. A moving object will not accelerate or decelerate _____a force is applied to it.

A. whether B. if C. unless D. till

61. If the buoyant force on a ship's hull is equal to or greater than the displacement tonnage, the ship will _____.

A. require ballast added to only the port side tanks B. be down by the head

C. sink D. float

62. If liquid refrigerant accidentally comes in contact with the eyes, _____immediately.

A. rub the eyes B. irritate the eyes

C. wash the eyes with a heavy boric acid solution D. obtain medical help

63. A _____sometimes called filter, is a device designed to prevent the passage of unwanted solids into the system.

A. Steam trap B. Check valve C. Separator D. Strainer

64. When entering a foam injected space ,you must _____breathing apparatus.

A. put out B. put on C. take off D. take in

65. If a fire occurs in the boiler room as a result of a leaking fuel line, you should FIRST _____.

A. notify the engineer on watch

B. isolate and secure the piping

C. throw sand on the fire

D. extinguish the fire using a combination nozzle with applicator

66. Before starting a diesel engine that has an engine driven lube oil pump, the engineer should _____.

A. open the bypass line B. cut in the lube oil cooler

C. pressurize the lube oil system D. top off the expansion tank

67. A(An) _____should be issued for every company complying with the requirement of the ISM Code by the Administration.

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A. ISM B. DOC C. SMC D. PSC

68. The essence（基本） of an abandon ship drill is that the survival crafts are manned and operated by the crew members assigned to them on the _____.

A. fire control plan B. fire drill C. muster list D. All of the above.

五、 关联题（每组关联题题干下有 4 个小题，每小题 4 个选项）

第一组：

The engine performance is usually evaluated by comparing them with the corresponding observations from when the ship was new. The best and most simple method of summarizing and obtaining a clear picture of the parameter changes is to use the synopsis(大纲) diagram, which includes a model curve and an actual service curve. These curves illustrate the functional relationship between the measured data and the parameter they are most dependent on or related to. A deviation curve can also be drawn based on the above-mentioned two curves. From the deviation curve, it is possible to easily follow the development and to determine which engine components should be overhauled, and also, from the slope of the curve, to determine approximately when the overhaul should be carried out.

The mean indicated pressure is a very important parameter, and it, to a certain extent, represents the engine output, therefore the data of many other important parameters are analyzed as the function of the mean indicated pressure. In a synopsis（大纲） diagram of the engine revolution, deviations from the model curve show whether the propeller is light or heavy, i.e. whether the torque on the propeller is small or large for a specified engine revolution. It is possible to judge whether the alterations are due to changes in the draught, or an increase in the propulsion resistance, for instance due to fouling of the hull. Valuable information is hereby obtained for determining a suitable docking schedule.

69. By which curve can we determine some engine components should be overhauled ?

A. a model curve B. an actual curve C. a MIP curve D. a deviation curve

70. According to the passage, to a certain extent, the engine output may be indicated by _____.

A. the torque on the propeller B. the fouling of the hull

C. the RPM of the engine D. the MIP of the engine

71. The word “ deviation ” in this passage means _____.

A. the synopsis diagram B. the model value

C. the actual value D. the difference between B and C

72. The torque on the propeller may vary with _____.

A. changes in the ship’s draught

B. an increase in the propulsion resistance

C. fouling of the ship’s hull

D. all the above

第二组：

Under the terms of the ISPS Code, shipping companies are required to designate a Company Security Officer (CSO) for the company and a Ship Security Officer (SSO) for each of its ships. The CSO’s responsibilities include ensuring that a Ship Security Assessment (SSA) is properly carried out, that Ship Security Plans (SSPs) are prepared and submitted for approval by the Administration and thereafter that the plan is implemented on board each ship.

The Ship Security Plan should indicate the minimum operational and physical security measures that the ship itself should implement at all times (i.e. security level

1) unless required to operate at a higher security level. The plan should also indicate the additional, or intensified, security measures the ship can take to move to and operate at security level 2 when instructed to do so. Furthermore, the plan should indicate the possible preparatory actions the ship could take to allow prompt response to instructions that may be issued to the ship at security level 3.

73. Under the terms of the ISPS code, a shipping company is required to designate _____.

A. SCO B. SSO C. CSO and SSO D. SSP and SSA

74. Which one of CSO’ responsibilities is NOT mentioned in the passage?

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A. ensuring that the SSA is properly carried out
B. ensuring that SSPs are prepared and submitted for approval
C. ensuring that the SSA is implemented on board each ship
D. performing regular security inspections of the ship
75. The SSP should contain all of the following items except_____.
A. minimum operational and physical security measures to be taken at security level 1
B. additional security measures to be taken at security level 2
C. intensified security measures to be taken at security level 3
D. procedures for SSA
76. In order to respond quickly to instructions that may be issued to the ship at security level 3, besides additional intensified security measures _____should be included in the ship's SSP.
A. minimum security measures B. preparatory actions that could be taken
C. orders from SSO D. orders from CSO

中华人民共和国海事局
2006 年第 3 期海船船员适任证书全国统考试题(总第 41 期)
科目：轮机英语 试卷代号：803
适用对象：无限、近洋航区 3000KW 及以上船舶大管轮
（本试卷卷面总分 100 分，及格分为 70 分，考试时间为 100 分钟）

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六、 单项选择题：
1. The ___ engine is used for alternators and some times for main propulsion with a gearbox to provide a propeller of between 90 to 120 rpm.
A. two-stroke B. four-stroke C. slow speed D. reversible
2. An indicator card or pressure-volume diagram, shows graphically the_____.
A. compression ratio of the engine
B. volume of the engine
C. relationships between pressure and volume during one stroke of the engine
D. relationships between pressure and volume during one cycle of the engine
3. The relative air pressure in the inlet manifold of a turbocharged diesel engine is usually _____.
A. greater than the average exhaust manifold pressure
B. less than the average exhaust manifold pressure
C. greater at the turbine wheel than at the impeller
D. greater at reduced engine speed
4. _____ is the removal of exhaust gases by blowing in fresh air.
A. Gas exchange B. Charging C. Scavenging D. Supercharging
5. Diesel engines driving alternators operating in parallel must maintain a set frequency regardless of load changes. The governor characteristic used to accomplish this is known as _____.
A. actuation B. sensitivity C. compensation D. promptness
6. The quantity of oil injected into the cylinder can be regulated _____.
A. by turning the pump plunger
B. by vary the fuel valve spring force
C. only by controlling the governor
D. by enlarging or diminishing the injection hole

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7. Among the rings of a piston the _____one is subjected to the greatest load and temperature.
A. bottom B. middle C. top D. any position
8. Before installing the seal, every part of the _____and the piston rod should be carefully cleaned.
A. bed-plate B. crankcase C. evaporator D. stuffing box
9. In a diesel engine, when refitting piston rings you should_____. I. check the ring gap at the smallest diameter of the cylinder II. remove carbon from the ring groove
A. I only B. II only C. both I and II D. neither I nor II
10. If there is water in fuel oil, the revolution of the engine will _____.
A. decrease B. increase C. be dismantled D. be reassembled
11. If _____are taken at regular intervals, any unequal distribution of load will be easily found out.
A. differential of crank-webs B. indicator diagrams
C. lube oil reading out D. misalignment of crank-throws
12. The major cause of trouble in a mechanical-hydraulic governor is contamination of the hydraulic fluid by _____.
A. dirt B. fuel oil C. governor cooling water D. sea water
13. If the jacket water temperature of an operating diesel engine suddenly rises above normal, the cause can be attributed to _____.
A. an overfilled expansion tank B. excess chromate treatment of the jacket water
C. a clogged raw water sea suction D. cavitation erosion of the heat exchanger tubes
14. Regarding a diesel engine crankcase, the general arrangement and installation should preclude the possibility of _____.
A. free entry of air to the crankcase
B. water entering the crankcase while engine wash-downs are being performed
C. excessive oil leakage during periods of increased blow-by
D. sub-cooling internal components
15. A thrust bearing is used with a propulsion diesel engine to _____.
A. control axial movement of the crankshaft
B. transmit engine thrust to the propeller shaft
C. absorb vibrations in the propeller shafting
D. prevent propeller thrust from being transmitted to the hull
16. A large low speed main propulsion diesel engine may become overloaded by_____.
I. a heavily fouled hull II. strong head winds and heavy seas
A. I only B. II only C. both I and II D. neither I nor II
17. A ship is propelled by a direct reversing large, slow-speed, diesel engine. One step in reversing the direction of propeller rotation for this vessel is by _____.
A. properly inflating the air operated clutch B. reversing the reduction gears
C. changing the gear ratio D. reversing the servomotor
18. Which of the listed methods of heat transfer takes place when two substances of different temperatures are in physical contact with each other?
A. Radiation B. Conduction C. Convection D. Each of radiation、conduction、convection
19. The purpose of the low pressure cutout switch is to _____.
A. maintain liquid refrigerant at the suction of the compressor
B. maintain a preset suction pressure to the compressor
C. start and stop the compressor at preset operating pressures
D. operate at minimum efficiency
20. Which of the following best describes "overcharge of refrigerant"?
A. too much refrigerant B. too little refrigerant C. refrigerant is ran out D. running is over
21. Short cycling of a refrigeration compressor refers to _____.

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A. frequently grounding out B. frequently starting and stopping

C. running too fast D. running too slow

22. Badly leaking refrigeration compressor discharge valves will cause _____.

A. overfeeding of the expansion valve B. damage to the condenser

C. constant running of the compressor D. flooding of the receiver

23. A refrigeration unit will tend to short cycling when operating _____.

A. under heavy loads

B. during hot gas defrost

C. under light loads

D. during starting conditions

24. In a purifier, the interface between the liquid seal and the oil should be positioned as close as possible to _____.

A. the outlet of oil B. the outlet of water C. the bowl periphery D. the center of bowl

25. The _____of the gravity disc is too big. It cause oil to flow through the water outlet. We changed the disc and no oil is found in the water outlet.

A. gravity B. diameter C. circumference D. cylinder

26. _____play a very important part in hydraulic systems by preventing interaction between different parts of the hydraulic circuit.

A. Motors B. Check valves C. Safety valves D. Reducing valves

27. In a radial piston pump, reversal and control of fluid flow are accomplished by moving the _____.

A. central valve B. radial plunger C. floating ring D. cylinder body

28. Rotation of the steering wheel on the navigation bridge initiates oil pressure being applied to the steering gear rams by _____.

A. regulating the oil flow with the six-way valve

B. moving the automatic differential valve

C. moving the receiving telemotor which regulates the two-way valve

D. varying the angle of a tilting box or eccentricity of a floating ring

29. Dual (双的)electro-hydraulic steering units usually operate _____.

A. with one pump on standby

B. with both pumps on line at the same time

C. with the follow-up gear disconnected

D. only when the rudder is moved amidships

30. Which of the following statements is correct concerning the viscosity of lubricating oil?

A. Viscosity will increase as temperature increases.

B. Viscosity is a measure of a fluid's internal resistance to flow.

C. Viscosity will decrease as temperature decreases.

D. Viscosity is not dependent on temperature.

31. Pressure in an operating hydraulic system is developed _____.

A. only by the pump as its primary function

B. by resistance to the fluid flow through the system

C. by the thermal input to the system's fluid

D. solely by the charge applied by the accumulators

32. AC and DC generators are similar in that they _____.

A. both generate alternating voltages

B. both rectify the voltage before delivery

C. are constructed at the same physical size for the same kilowatt rating

D. both supply three-phase power

33. The field coils _____ and the armature _____. This is in fact the arrangement adopted for large, heavy duty

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alternators.

A. are stationary/rotates B. are stationary/is stationary C. rotate/ is stationary D. rotate/rotate

34. While paralleling two AC generators using synchronizing lamps only, all three lamps will go dark when the generators are _____.

A. running at the same speed B. grounded C. of the same polarity D. in phase

35. The load sharing characteristics of two diesel generators operating in parallel are mostly dependent on their governor _____.

A. load limit settings B. idle speed settings C. speed limit settings D. speed droop settings

36. A generator is prevented from becoming motorized by the use of a/an _____.

A. over-speed trip B. reverse power relay C. back pressure trip D. governor controls

37. The emergency generator or emergency battery is connected to ___ on most large ships.

A. distribution boards B. section boards

C. main switch boards D. emergency switch boards

38. Bourdon Tube is probably the most commonly used _____ measuring instrument.

A. the absolute pressure B. the gauge pressure

C. the vacuum pressure D. the differential pressure

39. The sub-multiple prefix 'milli' (m) means _____.

A. one thousandth B. one millionth C. one billionth D. one trillionth

40. The meat box temperature control circuit, as used in the ship service refrigeration system, is an example of _____.

A. two position control B. single speed floating control

C. proportional control D. reset control

41. If both the 'high level' and 'low level' alarms come on for the same address of a centralized control console, the most likely problem is a/an _____.

A. extremely high level B. failed alarm C. low level D. sensor failure

42. Diesel engine control can be obtained by the bridge _____.

A. at any time

B. only after the engine room control station is switched to 'bridge control'

C. whenever the secondary station is switched to 'bridge control'

D. with the approval of the chief engineer only

43. After “F.W.E.” is given, the air system is shut down, the _____ gear put in, all drains and indicator cocks opened, and the cooling water kept running.

A. steering B. timing C. turning D. running

44. During UMS rounds, a duty engineer notices that the fuel oil overflow observation glass is full of oil. Should he_____.

A. stop all F.O. transfers immediately, and inform the chief engineer.

B. make a sounding of the F.O. overflow tank and decide if there is enough capacity to leave it until the following morning.

C. call a motorman and have him sound the F.O. overflow tank periodically during the night.

D. start the F.O. purifier.

45. Should a person be overcome due to lack of oxygen and high concentration of refrigerant, treat with _____.

A. fresh water B. fresh air

C. artificial respiration D. salt water

46. A class 'C' fire is burning _____.

A. diesel oil B. magnesium C. dunnage D. electrical insulation

47. Radiation can spread a fire by _____.

A. transmitting the heat of a fire through the ship's metal

B. burning liquids flowing into another space

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C. heated gases flowing through ventilation systems

D. the transfer of heat across an unobstructed space

48. When reentering an engine room that has been flooded with CO2, the investigating team should initially _____.

A. leave the access door partially open B. enter from the lowest level

C. enter from the highest level D. attempt to operate machinery

49. Your vessel has run aground and upon taking fuel oil tank soundings, you find that a fuel tank level has increased. You therefore should suspect _____.

A. condensation in the fuel tank

B. a crack in the hull portion of the fuel tank

C. a load of bad fuel

D. contamination from the saltwater flushing system

50. Which of the following statements represents the correct action to take when three crew members discover a fire?

A. One man report the fire, and the other two men fight the fire.

B. One man report the fire, one man fight the fire, and one man evacuate and secure the area.

C. One man report the fire, one man fight the fire, and one man act as a safety observer.

D. All three men fight the fire and report it immediately after it is extinguished.

51. Which lubricating oil additive is used in diesel engines to reduce the tendency for sludge and varnish to form on the engine parts?

A. Flash point improvers B. Pour point improvers

C. Inhibitors (抑制剂) D. Foam suppressors

52. Which of the following functions are chemical treatments for cooling water system designed to do?

A. Minimise corrosion, prevent deposits and scaling, and control of biological growths.

B. Increase design heat transfer coefficients.

C. Decrease the amount of cooling water required.

D. None of the functions named above.

53. Upon the completion of required tests, a _____should be placed on each extinguisher, showing the date and the person who completed the tests.

A. cap B. disc C. tag D. cover

54. _____is an opening for supplying seawater to condensers, pumps, etc. located in the hull below the waterline and having means for the attachment of the associated piping.

A. Sea chest B. Scupper C. Scuttle D. Sea port

55. _____is a series of trials done at sea to determine whether the ship has met the specifications of design, modification, or repair.

A. SEA WORTHINESS B. SEA TRIALS C. TRIAL-AND-ERROR D. DOCK TRIALS

56. The additional mark _____in the Classification Certificate for Machinery means propulsion apparatus is remotely controlled on the navigating bridge control station, and engine assembly control station is unmanned periodically.

A. BRC B. MCC C. AUT-0 D. AUT-1

57. Which of the following operations must be entered on the Oil Record Book Part I?

I. Routine discharge at sea of bilge water containing oil from the machinery spaces

II. Bunkering of fuel oil

A. I only B. II only C. both I and II D. neither I nor II

58. The approval period for a shipboard oil pollution emergency plan expires after _____.

A. one year B. two years C. four years D. five years

59. If the PSCO from general impressions or observations on board has _____for believing that the ship, its equipment or its crew do not substantially meet the requirements, the PSCO should proceed to a more detailed inspection.

A. clean report B. serious deficiencies C. clear grounds D. detention report

60. The fire drill must, as far as practicable, be conducted as if _____.

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A. there is a minor emergency B. there is an actual emergency
C. there were an actual emergency D. there were a minor emergency

61. Duties shall be so organized by the chief engineer officer that the first watch at the commencement of a voyage and the subsequent relieving watches are _____and otherwise fit for duty.
A. well trained B. in good luck C. in good health D. sufficiently rested

62. The officer in charge of the engineering watch _____the watch to the relieving officer if there is reason to believe that the latter is obviously not capable of carrying out the watch-keeping duties effectively.
A. shall take over B. shall not take over C. shall hand over D. shall not hand over

63. The officer in charge of the engineering watch shall ensure that all machinery involved with the maneuvering of the ship can be immediately be placed in the manual mode of operation when notified that the ship is _____.
A. at anchor B. at unsheltered anchorage
C. in congested waters D. in an open road-stead

64. According to the international regulations concerning the prevention of pollution of sea areas from ships, the disposal into the sea of all plastics is _____.
A. welcome B. admitted in some special sea areas C. prohibited D. acceptable

65. A vessel sailing through the specific special areas may discharge or dispose of _____.
A. incinerated ash at anytime
B. fairly dense material that will sink, i.e. metal cans or glass bottles at anytime
C. victual waste(食品垃圾) when at least 12 nautical miles from shore
D. absolutely no garbage at anytime

66. The viscosity regulator controls _____ in order to provide oil at the correct viscosity for combustion.
A. the fuel oil temperature B. the engine's load C. the engine's speed D. the fuel oil flow

67. The Company should ensure that _____involved in the Company's SMS have an adequate understanding of relevant rules, regulations, codes and guidelines.
A. masters B. chief engineers C. crew D. all personnel

68. _____means the level for which further specific protective security measures shall be maintained for a limited period of time when a security incident is probable or imminent, although it may not be possible to identify the specific target.
A. Security level 1 B. Security level 2 C. Security level 3 D. Security level 4

二. 关联题（关联题题干下有 4 个小题，每小题 4 个选项）
第一组：

At every dry-docking, propellers should be carefully examined and the slightest defect at once rectified. Similarly, any unusual vibration or noise whilst at sea should be investigated immediately and, if the cause cannot be found inboard, then the first opportunity must be taken of an under-water inspection. The expert examination and repair of propellers is a service provided by the leading manufacturers. Whenever possible, use should be made of this service because, first, it is not always easy to detect slight damage and, secondly, inexpert work can quite easily cause irreparable harm.

Cracks formed at or near blade edges, no matter how small, are potentially dangerous. If a crack should be found close to the boss(within 0.45 of the propeller radius) the makers should be consulted as any repair in this region involving heating can leave very high residual stresses which can only be removed by annealing the complete propeller. Small cracks can be temporarily stopped from spreading by drilling a hole of at least 1 mm in diameter at the extremity of the crack. The hole should be plugged to avoid any risk of cavitation.

69. An under-water inspection should be taken _____.
A. whenever any unusual vibration occurs
B. whenever any abnormal noise occurs
C. whenever the cause for any unusual vibration or noise while at sea cannot be found inboard
D. whenever every dry docking is carried out

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70. Why should the service provided by the leading manufacturers be used wherever possible ?

A. Only because the service is free of charge.

B. Only because it is not easy to detect slight damage.

C. Only because inexpert work can quite easily cause irreparable harm.

D. Because it is difficult to find slight damage and inexpert work can result in irreparable harm.

71. If a crack should be found near the boss (within 0.45 of the propeller radius), which action should be taken first ?

A. repairing this region

B. annealing the complete propeller

C. consulting the makers

D. drilling a hole with diameter less than 1 mm

72. Which of the following statements is true ?

A. If cracks formed near blade edges are very small, no care should be taken.

B. Only by annealing the complete propeller can the high residual stresses be removed.

C. Small cracks can be permanently stopped from spreading by drilling a hole.

D. The hole should be drilled at the middle of the crack.

第二组：

Once detected the presence of a fire, it must be made known quickly to as many people as possible. It is essential therefore that the bridge is informed of the location and extent of the fire. A small fire might reasonably be immediately tackled by the finder but attempts should be made whilst fighting the fire to attract attention. Shouting 'Fire', banging on bulkheads, deliberately setting off equipment alarms in the vicinity, all are possible means of attracting attention. Anyone finding a fire must decide whether to fight it immediately or whether to leave it and inform others first. The more people who know of a fire the greater the efforts that can be brought to bear upon it. If in doubt—inform!

Ships are built to contain fires in the space where they begin. Fire resisting bulkheads and decks are positioned at appropriate distances in order to limit the spread of fire, and it remains for fire fighting personnel to ensure that these barriers are secure whilst attempting to fight the fire. All doors and openings should be closed, all ventilation and exhaust fans stopped, and flammable material isolated from the space. It should be remembered that a fire exists in three dimensions and therefore has six sides, so it must be contained on six sides.囍

73. According to the passage, once a large fire detected, _____should be informed immediately.

A. chief engineer

B. bridge

C. master

D. deck officer

74. All of the following methods that may possibly be used to give alarms to others in case of a fire are mentioned in the passage except ____.

A. shouting

B. banging on bulkheads

C. setting off equipment alarms

D. phoning

75. Fire resisting bulkheads and decks provide barriers to_____.

A. control the spread of fire

B. form a room for fire fighting personnel

C. secure fire fighting personnel

D. isolate fire fighting personnel

76. Which one is NOT right for fire fighting?

A. doors and openings to be closed

B. exhaust fans to be stopped

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C. fire to be controlled best in one direction
D. flammable material to be isolated
中华人民共和国海事局
2007 年第 1 期海船船员适任证书全国统考试题(总第 42 期)
科目：轮机英语　　试卷代号：803
适用对象：无限、近洋航区 3000KW 及以上船舶大管轮
（本试卷卷面总分 100 分，及格分为 70 分，考试时间为 100 分钟）

答题说明：请选择一个最合适的答案，并将该答案按答题卡要求，在其相应位置上用 2B 铅笔涂黑。第 1 题至 68 题，每题 1 分，第 69 题至 76 题，每题 1.5 分，第 77 题至 78 题， 每题 10 分。

七、　单项选择题：

1. Diesel engine electric starting motors generally require heavier duty motors and operate at higher voltages than comparable starting motors for gasoline engines due to _____.
A. higher speed required　　B. flywheel effect
C. lower starting temperatures　　D. higher compression pressures

2. A diesel engine which is rated for normal operation at a crankshaft speed of 800 RPM, is commonly classed as a _____.
A. slow-speed diesel　　B. medium-speed diesel
C. high-speed diesel　　D. constant-speed diesel

3. Which of the listed factors will indicate the most about the ability of a fuel to ignite in a diesel engine?
A. Viscosity　B. Sulfur content　C. Pour point　D. Cetane number

4. _____ allows for expansion and water make up in the water cooling system.
A. A top tank　B. A head tank　C. A head valve　D. A drain tank

5. Thermostatic steam pressure reducing valves are used in the fuel oil service system to control the _____.
A. double bottom fuel oil tank temperature
B. heater supply steam flow
C. pressure of the fuel supplied to the burners
D. attemperator(保温装置) steam flow in the heater discharge circuit

6. High diesel engine cooling water temperatures can be caused by _____.
A. air in the cooling system　B. an overhauled water pump
C. correct amount of coolant　D. no air in the cooling system

7. In a diesel engine lube oil system, which of the following parts should be lubricated first?
A. Camshaft bearings　B. Main bearings　C. Piston crowns　D. Cylinder walls

8. Once a trunking fire is detected the engine should be slowed down, On no account _____.
A. the trunking should be opened up
B. should the trunking be opened up
C. the trunking should not be opened up
D. should the trunking not be opened up

9. Persistent knocking in one cylinder of an eight cylinder diesel engine would MOST likely be caused by _____.
A. using fuel oil with low cetane number
B. a badly worn piston pin
C. a loose flywheel key
D. a loose bed plate bolt

10. Significant retardation of a diesel engine fuel injection timing will result in _____.
A. smoother engine operation　B. advanced fuel ignition
C. increased fuel economy　D. reduced engine power

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11. Leaky exhaust valve will result in which of the following? I. high exhaust temperature; II. low compression pressure; III. low firing pressure.

A. I and II B. I only C. II only D. I,II and III

12. In ships where the engine room is designed as UMS, temperature sensors are fitted at critical points within the scavenge spaces. Activation would cause automatic _____of the engine.

A. stop B. start C. speed up D. slow down

13. During extremely cold weather, while starting an engine, it turns too slowly and fails to start. This problem is most likely the result of _____.

A. high fuel oil viscosity B. low fuel oil temperature

C. high lube oil viscosity D. energized glow(发热) plugs

14. Pitted reduction gear teeth having a deep blue color with evidence of overheating have been operated with _____.

A. excessive speed B. improper warm-up

C. extreme misalignment D. inadequate lubrication

15. The driving force of a propeller is transmitted to the hull through the_____.

A. bevel(倾斜) gear teeth B. helically cut gear teeth

C. sleeve bearings D. thrust bearing

16. Vessel propellers are classified as being right hand or left hand. A right hand propeller turns clockwise when viewed from _____.

A. the bow B. the stern C. the port side D. the starboard side

17. Prolonged operation of a diesel engine with a closed cooling water system, at lower than normal designed operating temperatures can _____.

A. increase power output B. decrease lube oil viscosity

C. eliminate fuel knock D. cause sulfuric acid formation

18. Which of the following modes of heat transfer does NOT require any physical contact between a warmer and a cooler substance?

A. Radiation B. Conduction C. Natural convection D. Contact directly

19. Moisture in the refrigerant may _____.

A. freeze on the expansion valve seat and reduce the flow of liquid refrigerant

B. emulsify the oil in the condenser

C. freeze in the king valve

D. clog the oil trap

20. Which of the following best describes "overcharge of refrigerant"?

A. too much refrigerant B. too little refrigerant

C. refrigerant is ran out D. running is over

21. An increase in the heat load to a refrigeration system will cause _____.

A. the suction pressure to decrease

B. the suction temperature to increase

C. increased ice formation on the evaporator coil

D. excessive short cycling of the compressor

22. If the refrigeration compressor crankcase is sweating, the cause may be due to _____.

A. a shortage of refrigerant

B. the compressor running continuously

C. liquid refrigerant returning to the compressor

D. the compressor short cycling on the high pressure cutout

23. Low compressor head pressure in a refrigeration system can be caused by _____.

A. insufficient condenser cooling water B. excessive condenser cooling water

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C. air in the refrigeration system D. excessive refrigerant in the system

24. A centrifuge arranged to separate impurities and small amounts of water from oil is known as _____.

A. an oily water separator B. a purifier

C. a centrifugal compressor D. a clarifier

25. Which of the following problems will occur if a disk-type centrifugal lube oil purifier is not properly primed prior to admitting oil flow to the bowl?

A. Contamination of the lube oil by emulsification(乳化) will result.

B. The lube oil will not be subjected to the proper centrifugal force.

C. The lube oil will overheat and flash.

D. Oil will discharge from the heavy phase discharge port and be wasted.

26. What type of valve is used to direct the flow of hydraulic fluid?

A. relief valve B. direction control valve C. stop valve D. pressure control valve

27. Leakage of hydraulic fluid from around the shaft of a hydraulic motor may be caused by _____.

A. permanent loss of pump suction B. worn shaft seals

C. high level in the oil sump D. low motor RPM

28. When there is no movement of the rams on an electro-hydraulic steering gear, the tilting box of the running pump is _____.

A. set for maximum torque B. on the purge and vent stroke

C. in the neutral position D. rotating backwards

29. Air trapped in the hydraulic fluid of a steering system should be indicated by _____.

A. the pump overspeeding B. an improper rudder response

C. bubbles in the sight glass D. ram relief valves lifting

30. Hydraulic machinery failures are commonly caused by contamination of the hydraulic fluid and _____.

A. fluid friction B. fluid turbulence C. component misalignment D. pressure surges

31. Which of the following can be used in hydraulic transmission system?

A. Hydraulic oil B. Animal oil C. Light oil D. Fuel oil

32. Current changing in direction and rising and falling in value is_____.

A. A.C. B. D.C. C. generator D. fresh water generator

33. A DC generator is used to supply direct current in order to maintain an AC generator field and is known as a/an _____.

A. rotor B. stator C. exciter D. armature

34. You are attempting to parallel two AC generators, and the synchroscope pointer is revolving in the fast direction. This indicates that the frequency of the incoming machine is_____.

A. higher than the bus frequency

B. lower than the bus frequency

C. the same as the bus frequency but out of phase with it

D. the same as the bus frequency and the circuit breaker may be closed at any pointer position

35. Which of the following should be the first step in removing a generator from parallel operation?

A. Trip the generator off the switchboard.

B. Turn off all electrical equipment.

C. Remove the load from the 'off going' generator.

D. Increase the cycles of the generator staying on the line.

36. _____is provided to alternators, in the event of prime mover failure to ensure that the alternator does not act as a motor.

A. Reverse current protection B. Reverse power protection

C. Synchronising device D. Frequency meter

37. The part of the shipboard electrical system used to control the distribution of power to the branch circuits, is the

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_____.

A. bridge control panel B. disconnect links C. governor relay box D. main switchboard

38. _____control system is one in which the control action is independent of the output.

A. Feed back B. Negative feed back C. Close loop D. Open loop

39. A device which prints out a permanent record of the plant operating conditions is known as the _____.

A. ana(名言集) logger B. bell logger C. alarm logger D. data logger

40. Which of the listed devices would be installed at a control system air pressure reducing station?

A. Moisture separator B. Vacuum breaker C. Lubricator D. Non-return valve

41. The two most common gases used in pneumatic systems are _____.

A. compressed air and nitrogen B. helium and nitrogen

C. oxygen and hydrogen D. oxygen and acetylene

42. UMS stands for _____.

A. ultra much space B. universal medium system

C. unit machined space D. unattended machinery space

43. Before putting on the starting air, the reversing and control gear should be _____.

A. operated B. stopped C. checked D. removed

44. "Movement of engine no longer required." means "_____".

A. Stop Engine B. No Engine Revolutions C. Stand-by Engine D. Finished With Engine

45. A tank which has been sealed for a long period of time can be dangerous because _____.

A. steel surfaces consume oxygen by rusting

B. sealed tanks usually form a vacuum

C. moisture condenses in the tank, displacing the oxygen

D. most tank coatings give off poisonous vapors in the presence of moisture

46. A fire in a pile of dunnage would be classified as a _____.

A. class A B. class B C. class C D. class D

47. Fire dampers prevent the fire spreading through the process of _____.

A. convection B. conduction C. radiation D. direct contact

48. Which of the fire extinguishers listed is to be weighed annually and sent ashore for recharging if the weight loss exceeds 10% of the weight of a full charge?

A. Foam B. Soda acid C. Dry chemical D. Carbon dioxide

49. As soon as you hear the fire and emergency signal, you should ensure that the _____.

A. ring buoys are thrown overboard B. engines are stopped

C. fire pumps are started D. life preservers have been issued to everyone

50. If there has been a fire in a closed unventilated compartment it may be unsafe to enter because of _____.

A. unburned carbon particles B. excess nitrogen

C. a lack of oxygen D. excess hydrogen

51. Which lubricating oil additive is used in diesel engines to reduce the tendency for sludge and varnish to form on the engine parts?

A. Flash point improvers B. Pour point improvers C. Inhibitors D. Foam suppressors

52. Why is it necessary to have routine testing of the cooling water?

A. To ensure that the proper residuals of treatment chemicals, as specified, are maintained all time.

B. To trace leakage in the cooling water system.

C. It is not necessary.

D. To detect the presence of contaminants in the water that may be injurious to the cooling system.

53. Before welding is permitted on a fuel tank, it must be certified or declared _____.

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A. safe for personnel B. safe for hot work
C. not safe for personnel D. not safe for hot work

54. "AMIDSHIPS" refers to_____.
A. Back of the vessel
B. The middle portion of a ship
C. A backward movement of a vessel
D. Across the ship, at right angles to the fore-and-aft centerline

55. The depth of the ship below the waterline measured vertically to the lowest part of the hull is called_____.
A. trim B. lean C. draft D. tonnage

56. The additional mark_____ in the Classification Certificate for Machinery represents that personnel are watching at engine assembly control station and monitoring all machinery and electronic devices.
A. BRC B. MCC C. AUT-0 D. AUT-1

57. Which of the following should be recorded in Oil Record Book Part I(machinery space operation)? Ⅰ、non automatic discharge overboard of machinery space bilge water Ⅱ、automatic discharge overboard of machinery space bilge water
A. Ⅰ B. Ⅱ C. Ⅰ and Ⅱ D. neither Ⅰ nor Ⅱ

58. The approval period for a shipboard oil pollution emergency plan expires after_____.
A. one year B. two years C. four years D. five years

59. Enhanced procedures concerning the exercise of _____have been developed to allow intervention(干涉) the case of deficiencies deemed(认为)pose a danger to persons, property or the environment.
A. port state control B. flag state control C. fire and boat drill D. safety inspection

60. "Insufficiency of manning or insufficiency of certification of seafarers" is an identification of a_____.
A. substandard ship B. standard ship C. over-standard ship D. reference ship

61. STCW78/95 Convention describes that _____are laid down for the certification of engineer officers in charge of a watch in a traditionally manned engine room, or the designated engineer in a periodically unmanned engine room.
A. available minimum requirements B. available maximum requirements
C. mandatory minimum requirements D. mandatory maximum requirements

62. When the machinery spaces are in the periodic unmanned condition, _____shall be immediately available and on call to attend the machinery space.
A. the chief engineer
B. the designated engineer from shipyard
C. the designated duty engineer in charge of the engineering watch
D. the designated surveyor from classification society

63. The officer in charge of the engineering watch shall ensure that at all times bridge orders relating to changes in _____of operation are immediately implemented.
A. ahead or astern B. fore or aft C. up or down D. speed or direction

64. When off loading garbage to another ship, your records must identify that ship by name and _____.
A. home port B. operator's name of record C. official number D. master's name

65. Bilges may be pumped_____.
A. on the outgoing tide
B. overboard after dark
C. overboard through an oily water separator
D. anytime in an emergency, i.e. main engine lube oil failure

66. The main objective of the SOLAS Convention is to specify _____for the construction, equipment and operation of ships, compatible their safety.
A. at most references B. at least references
C. maximum standards D. minimum standards

67. The Company should ensure that _____documents are promptly removed.

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A. absolute B. updated C. outdated D. new

68. Each ship shall carry on board a ship security plan approved by_____.

A. the chief engineer officer B. the master of the ship

C. the manager of the company D. the Administration

二、关联题（关联题题干下有 4 个小题，每小题 4 个选项）

第一组:

Port State Control (PSC) is the inspection of foreign ships in national ports for the purpose of verifying that the condition of the ship and its equipment comply with the requirements of international conventions and that the ship is manned and operated in compliance with applicable international laws.

The primary responsibility for ensuring that a ship maintains a standard at least equivalent to that specified in international conventions rests with the flag State and if all flag States performed their duties satisfactorily there would be no need for port State control. Unfortunately this is not the case as evidenced by the many marine accidents around the world - hence the need for additional control.

The authority for exercising PSC is the national law based on relevant conventions. It is therefore necessary for a port State to be Party to those conventions and to have promulgated the necessary legislation before exercising PSC. In accordance with the provisions of the applicable conventions, Parties may conduct inspections of foreign ships in their ports through Port State Control Officers (PSCOs).

69. The purpose of PSC is _____.

① to check and inspect foreign ships

② to verify the condition of a ship in compliance with requirements of international conventions; ③ to make sure that the ship is manned and operated well;

④ to detain ships

A. ①② B. ②③ C. ①③ D. ①②③④

70. Who will be responsible for ensuring that a ship maintains a standard at least equivalent to that specified in international conventions?

A. PSCOs B. Ship owners C. Flag states D. Port states

71. Before exercising PSC, a port state should_____.

A. become a contracting Party and promulgate regulations for implementing PSC

B. inform ship owners

C. establish procedures

D. inform shipping companies

72. PSC inspection is implemented by_____ through_____.

A. flag states/PSCOs B. flag states/ship owners

C. port states/PSCOs D. port states/ship owners

第二组:

Scavenge port inspection provides useful information about the condition of cylinders, pistons and rings, at low expense. The inspection consists of visually examining the piston, the rings and the lower part of the cylinder liner, directly through the scavenge air ports. To reduce the risk of scavenge box fire, remove any oil sludge and carbon deposits in the scavenge air box and receiver in connection with the inspection.

The port inspection should be carried out at the first stop after a long voyage, e.g. by anchoring if possible, to obtain the most reliable result with regard to the effectiveness and sufficiency of the cylinder lubrication and the combustion cycle (complete or incomplete).

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A misleading result may be obtained if the port inspection is carried out after arrival at harbor, since manoeuvring to the quay and low-load running, e.g. river or canal passage, requires increased cylinder oil dosage, i.e. the cylinders are excessively lubricated. Further, during low load, the combustion cycle might not be as effective and complete as expected, due to the actual fuel oil qualities and service (running) condition of the fuel injection equipment. It is highly recommended to take this information into consideration.

73. The components of an engine involved in normal scavenge port inspection comprise .

① the piston ② piston rings ③ the lower part of the cylinder liner

A. ①② B. ③ C. ② D. ①②③

74. If the scavenge box had too much oil sludge and carbon deposits, what would occur?

A. excessive cylinder oil consumption

B. the scavenge box fire

C. the crankcase explosion

D. excessive wear of the cylinder liner

75. In order to obtain the most reliable result with regard to the effectiveness and sufficiency of the cylinder lubrication and the combustion cycle, when should the scavenge port inspection be carried out?

A. at the first stop after a long voyage, e.g. by anchoring if possible

B. at the first stop after arrival at harbor

C. at the first stop after low load running

D. at the first stop after passing river or canal passage

76. What is the reason that the scavenge port inspection shouldn't be carried out after arrival at harbor?

① the main engine requires increased cylinder oil dosage during manoeuvring

② the combustion cycle might be ineffective and incomplete under low load operation

A. ① B. ② C. ①② D. either①or②

中华人民共和国海事局

2007 年第 6 期海船船员适任统考试题（总第 44 期）

科目：轮机英语 试卷代号：803

适用对象：无限/近洋航区 3000KW 及以上船舶大管轮

（本试卷卷面总分 100 分，及格分为 70 分，考试时间 100 分钟）

答题说明：请选择一个最合适的答案，并将该答案按答题卡要求，在其相应位置上用 2B 铅笔涂黑。第 1 题至 68 题，每题 1 分，第 69 题至 76 题，每题 1.5 分，第 77 题至 78 题，每题 10 分.

一、 单项选择题

1. The trend nowadays is to build the frame box as a separate fabricated construction and then, after stress relieving and machining the mating surfaces, to mount it on the . This has the advantage of saving weight.

A. seating B. bed-plate C. entablature D. cylinder block

2. A two stroke diesel engine exhaust temperature will be lower than a four stroke diesel engine of the same displacement because the .

① MEP is lower and the scavenging air is cooling the exhaust gases

② valve overlap in a four stroke

A. ① B. ② C. ① and ② D. Neither ① nor ② is correct

3. Theoretical perfect combustion in a diesel engine yields by-products of .

A. aldehydes and carbon dioxide B. water vapor and carbon monoxide

C. nitrogen and carbon monoxide D. water vapor and carbon dioxide

4. The common method of applying oil to the cylinder walls is by means of small pump assembled in units, known as

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A. mechanical lubricator B. lubrication function
C. forced feed system D. bearing lubrication
5. In a main propulsion turbocharged diesel engine, the speed of the turbocharger varies according to the .
A. governor droop B. speeder spring tension
C. fuel rack lag D. load on the engine
6. Diesel engines are started by supplying into the cylinders in the appropriate sequence for the required direction.
A. cooling water B. compressing air C. compressed air D. cylinder oil
7. Which of the following devices is a common basic element with nearly all mechanical governors?
A. Power piston B. Control rack
C. Weights acted on by centrifugal force D. Isochronous（同步的）droop spring
8. Injectors for use with heavy fuel oil must be cooled by either water or light oil to .
A. prevent heat corrosion to internal components
B. increase fuel delivery rate and economy
C. prevent pre-ignition
D. avoid carbonization of the nozzle tips
9. Loss of lubricating oil pressure to the main propulsion diesel engine will actuate a/an .
A. over-speed trip B. audible/visual alarm
C. the ships/boats general alarm D. reserve oil storage tank
10. If clearance between a piston and the cylinder wall is excessive, piston slap will occur. The slap itself is caused by .
A. alternation of side thrust
B a breakdown of the lube oil film on the cylinder
C. worn piston boss piston pin bearings
D. fluctuating gas pressure in tile combustion space
11. The major cause of fuel pump and injection system problems is .
A. improper adjustments B. contaminated fuel
C. kinked fuel lines D. excessive engine vibration
12. At least ___ cylinders in four--stroke engine will be configured to ensure that the engine can started with the crankshaft at whatever position.
A. 6 B. 2 C. 12 D. 8
13. The main propulsion diesel engine jacket water temperature rises above normal, with the raw sea suction and the expansion tank water level being normal. Which of the following problems is most likely the cause?
A. Faulty thermostatic bypass valve.
B. Eroded zinc pencils in the heat exchanger
C. Steam formation in the expansion tank.
D. Excessive leakage from jacket water pump seals.
14. Crankcase explosions in propulsion diesel engines result from .
A. the splashing of lubrication oil by the crankshaft
B. the dilution of crankcase oil with particles of combustion
C. broken fuel lines spraying oil on the crankcase
D. the ignition of unburned fuel and air in the crankcase
15. Lubrication for the main reduction gears used with diesel engines is usually supplied by .
A. oil from the main engine sump B. an independent lube oil system
C. the stern bearing head tank D. the stem bearing sump tank
16. Propeller pitch speed minus ship speed divided by the propeller pitch speed is termed .
A. apparent slip B. true slip C. pitch D. propulsive efficiency
17. One of the most common causes of reduction gear failure is gear wear caused by scoring as a result of .
A. surface fatigue of the gears B. an inadequate lube oil film

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C. plastic flow of the gears D. fretting corrosion from water

18. The heat identified by only a change in temperature is known as .

A. sensible heat B. latent heat C. total heat D. residual heat

19. The expansion valve used in a refrigeration system regulates the .

A. superheat of the gas leaving the compressor

B. back pressure in the evaporator

C. temperature in the refrigerated space

D. degree of superheat of the gas leaving the evaporator

20. A thermostatic expansion valve is properly controlling evaporator superheat. Adjusting this valve to lower the superheat will result in a/an .

A. evaporator pressure decrease B. evaporator coil over-feed

C. evaporator capacity increase D. expansion valve diaphragm rupture

21. In the refrigeration system, a shortage of refrigerant is indicated by .

A. the compressor short cycling on high pressure cut out switch

B. high suction pressure

C. high head pressure

D. bubbles in the sight glass

22. If a refrigeration system were short of refrigerant, the condition would result in .

A. continuous running of the compressor

B. high suction pressure

C. high discharge pressure

D. short cycling of the compressor on the water failure switch

23. If the suction pressure at the refrigeration compressor is below normal, the cause can be .

A. refrigerant overcharge B. overfeeding by the expansion valve

C. a restricted suction strainer D. due to short cycling of the compress

24. A centrifuge arranged to separate two liquids is known as .

A. an oily water separator B. a purifier

C. a centrifugal compressor D. a clarifier

25. If the bowl of a disk type centrifugal purifier when operated as a separator is not primed, the .

A. oil has a tendency to emulsify in the bowl

B. purifier will act as a clarifier at the discharge ring

C. oil will be lost through the water discharge ports

D. oil solids will be deposited only at the intermediate top disk

26. Among the basic categories of equipment, which of the following are used to allow the hydraulic energy to be controlled?

A. hydraulic pumps B. valves C. hydraulic cylinders D. hydraulic motors

27. The usual number of single-acting pistons used in a variable stroke axial-piston pump is .

A. 3 or 5 B. 5 or 7 C. 7 or 9 D. 9 or 11

28. The follow-up gear on an electro-hydraulic steering gear .

A. relieves excessive fluid pressure

B. takes the pump off stroke when the desired rudder angle is attained

C. allows for rudder movement faster than the movement of the ship's

D. returns the rudder to amidships when the wheel is released.

29. While inspecting the steering system at sea, you should check for .

A. air bubbles in the sight glass B. any leaks in the system

C. over-travel in the rudder angle indicator D. lost motion in the rams

30. After installing a new hydraulic pump in a system, what special attention should be given to the hydraulic system?

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A. The relief valves in the system should be readjusted.

B. The filters and strainers should be checked frequently

C. All system pressure should be readjusted.

D. The system should be drained and renewed with a fluid of different operating characteristics.

31. Before performing any maintenance on a hydraulic system storing energy in an accumulator, you should .

A. pressurize the system to test for leaks

B. bleed off all pressure within the system

C. operate the machine until it reaches normal temperature

D. disconnect the pump pressure control switch

32. The output voltage of a 440 volt, 60 hertz, AC generator is controlled by the .

A. prime mover speed B. exciter output voltage

C. load on the alternator D. number of poles

33. The field coils and the armature . This is in fact the arrangement adopted for large, heavy duty alternators.

A. are stationary / rotates B. are stationary /is stationary

C. rotate / is stationary D. rotate / rotates

34. You are attempting to parallel two AC generators and the synchroscope pointer is revolving in the slow direction. This indicates that the frequency of the incoming machine is .

A. higher than the bus frequency

B. lower than the bus frequency

C. file same as file bus frequency but out of phase with it

D. the same as the bus frequency, and the circuit breaker may be closed at nay pointer position

35. The frequency of an AC generator is controlled by the ___.

A. rheostat B. governor C. exciter D. capacitor

36. Electrical supply is always needed even if only for lighting so after a ship goes into service it is extremely rare for the main bus-bars to be dead, it therefore follows that the bus-bars are continuously alive the life of the ship.

A. along B. with C. throughout D. for

37. After a ship enters service it is for the main bus-bar to be made dead.

A. usually B. commonly C. exceptional D. unavoidably

38. The difference between measured and desired values is called .

A. make-up B. desired value C. deviation D. set value

39. The unit of electrical resistance is the .

A. ampere B. volt C. watt D. ohm

40. You must take good care of the drainage cock of the air control system. Because lead scale formed which might malfunctions the pilot control valve and other instruments.

A. the temperature B. the rust C. the pressure D. the humidity

41. The mode of control employed by an alarm circuit is a .

A. two position control B. single speed floating control

C. proportional speed floating control D. reset control

42. With UMS, when the engine room is unwatched will control the main engine.

A. the bridge officer on watch B. the chief engineer

C. the duty engineer D. the duty motorman

43. Before "stand by" is rung on the engine telegraph, it is usual to give the main diesel engine a brief trial ahead and astern.

A. with power B. on power C. with air D. on air

44. When under maneuvering conditions with the machinery being manually operated the control unit or console should be

A. automatically controlled B. continuously manned

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C. off power D. continuously unmanned

45. Which of the listed conditions can be considered as the single greatest cause of accident?

A. Speed B. Excessive knowledge or skill

C. Human error D. Excitement

46. A fire in a pile of dunnage would be classified as a .

A. Class 'A' B. Class 'B' C. Class 'C' D. Class 'D'

47. Which of the listed fire extinguishers cannot be easily recharged aboard ship?

A. Soda acid B. Carbon dioxide C. Dry chemical D. cartridge-operated Foam

48. CO2 extinguishes a fire by .

A. a blanket of bubbles formed on the

B. smothering

C. cooling

D. isolating the heat from the fuel

49. As a duty engineer, as soon as your hear the fire emergency signal, you should ensure that the .

A. ring buoys are thrown overboard B. engines are stopped

C. fire pumps are started D. life preservers have been issued to everyone

50. To safeguard the operator and other personnel working on or near a hoisting operation, which of the following precautions should be observed?

A. Keep a load on the hoist until all personnel are finished working.

B. Set the load on a movable dolly when transportation may be needed.

C. Have one man keep a hand on the load to steady it.

D. Insure that the lifting gear capacity is not exceeded.

51. If a used lube oil analysis indicates excessive chromate content, this means .

A. air filtration is inadequate B. engine coolant is leaking into the lube oil

C. fuel oil is leaking into the lube oil D. the piston rings are excessive worn

52. Emulsion oils and sodium nitrite are both approved additives, but the latter cannot be used if any pipes are or if ally soldered joints exit.

A. chromed B. welded C. galvanized D. bolted

53. The tool is used in precision work to smooth or enlarge a slightly undersized hole.

A. round out B. round file C. reamer D. hole driller

54. When the tail-shaft is drawn from a vessel in dry-dock, which of the following inspections is required to be carried out?

A. The propeller hub taper and shaft keyway should be inspected for cracks or corrosion.

B. The stern bearing alignment with the stern frame should be checked.

C. The interior of the stern tube should be inspected for leaks.

D. The shaft liner should be removed and inspected for cracks.

55. The depth of the ship below the waterline measured vertically to the lowest part of the hull is called .

A. trim B. lean C. draft D. tonnage

56. The additional mark in the Classification Certificate for Machinery represents the propulsion apparatus is remotely controlled on the navigating bridge control station, and engine room is watched by duty personnel.

A. BRC B. MCC C. AUT-0 D. AUT-l

57. Oil Pollution Regulations require any transfer or discharge of oil or oily mixtures to be recorded in the .

A. bridge log B. Master's log C. engine room log D. oil record

58. The International Oil Pollution Prevention Certificate is valid for a period of .

A. one year from the date of issue B. five years from the date of issue

C. three years from the date of issue D. four years from the date of issue

59. During PSC inspection related to the ISM Code, of the Safety Management System (SMS) should be carried out if

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clear grounds are established.

A. a less favorable inspection B. a more favorable inspection

C. a less detailed inspection D. a more detailed inspection

60. The Port State Control officer may witness a fire drill carried out by the crew assigned to these duties on the .

A. Navigation Log Book B. Engine Room Log Book

C. Oil Record Book D. Muster List

61. STCW78/95 Convention states that the officer in charge of the engineering watch is the representative.

A. ship-owner's B. master's C. chief engineer's D. manager's

62. All engineer officers and engine room ratings shall be aware of the serious effects of operational or accidental pollution of the marine environment and shall take all possible ____ to prevent such pollution, particularly within the framework of relevant international and port regulations.

A. steps B, procedures C. precautions D. programs

63. The officer in charge of the engineering watch shall ensure that all machinery involved with the maneuvering of the ship can immediately be placed in the __ of operation when notified that the ship is in congested waters.

A. manual mode B. automatic mode C. remote mode D. follow-up mode

64. In the event of a small bunker oil spill on deck occurring while bunkering, you should .

A. wash down the area immediately with a fire hose

B. wash down the area with kerosene

C. cover the area with absorbent material

D. cover the area with foam

65. A segregated ballast system is a system where .

A. all ballast is processed through the oily water separator

B. ballast is taken on and discharged through a separate main deck

C. ballast and cargo tanks are separated by cofferdams

D. all ballast lines, tanks, and pumps are independent of those used for oil

66. The SOLAS Convention in its successive forms is generally regarded as the most important of all international treaties concerning the of merchant ships.

A. pollution B. economization C. safety D. efficiency

67. The objectives of the ISM Code are to ensure ①safety at sea②prevention of human injury or loss of life③avoidance of damage to the marine environment and to property

A. ① B.② C.②③ D.①②③

68. means the level for which appropriate additional protective security measures shall be maintained for a period of time as a result of heightened risk of a security incident.

A. Security level 1 B. Security level 2 C. Security level 3 D. Security level 4

二、 关联题（关联题题干下有 4 个小题，每小题 4 个选项）

第一组

An automatic system usually consists of a control system and an information system. A control system is a system which measures the condition of some entity and, with the information, governs the state of a variable; i.e., speed, temperature, pressure, position, etc. The open-loop system is the simplest form a control system may assume. It is distinguished from the closed-loop system by the lack of an input which measures the state of the controlled variable; such an input is called a feedback. In modern ships the open-loop system has practically disappeared and the closed-loop system which operates with a feed-back is extensively used. An information system serves the parallel function of monitoring system or plant performance. The monitoring function may serve a number of purposes; specifically it may indicate values of controlled variables to guide remote control operations, warn of off-limit conditions and provide record of performance. In many cases a visual and audible alarm may be provided to warn of off-limit conditions on board ship and, associated with this, the important variables will be recorded on demand. The automatic control system can be more sophisticated by

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incorporating digital-processing equipment, that is, a computer. This computer is usually fed with signals from all sensors. It scans the values of the sensors and generates alarm signals for off-limit conditions, acting as a super-supervisor. Sometimes, it can even make necessary and take the necessary action to optimize performance without human intervention.

69. The closed-loop system differs from the open-loop system by

A. the lack of a feedback B. the presence of a feed back

C. the lack of a computer D. the presence of a computer

70. A feedback is an input ____

A. which governs the state of a variable

B. which provides a visual and audible alarm

C. which indicates values of controlled variables

D. which measures the state of the controlled variable

71. The monitoring function may serve all of the following purposes except

A. instigating corrective action B. indicating values of controlled variables

C. warning of off-limit conditions D. providing record of performance

72. The word "off-limit" in the passage may mean .

A. off-set B. off-state C. within limits D. beyond the limit

第二组

The only attention that heat exchanger should require is to ensure that the heat transfer surfaces remain substantially clean and the flow passages generally clear of obstruction. Indication that undue fouling is occurring is given by a progressive increase in the temperature difference between the two fluids, over a period of time, usually accompanied by a noticeable rise in pressure loss at a given flow.

Fouling on the sea-water side is the most usual cause of deterioration in performance. The method of cleaning the sea water-side surfaces depends on the type of heat exchanger. With shell-and-tube heat exchangers, the removal of the header covers or, m the case of the smaller heat exchangers, the headers themselves, will provide access to the tubes. Obstructions, dirt, scale etc., can then be removed, using the tools provided by the heat exchanger manufacturer. Flushing through with fresh water is recommended before a heat exchanger is returned to service. In some applications, such as piston oil cooling, progressive fouling may take place on the outside of the tubes. Most manufactures recommend a chemical flushing pr6cess to remove this in situ~ without dismantling the heat exchanger.

Plate heat exchangers may be cleaned by unclamping the stack of plates and mechanically cleaning the surface of each plate as recommended by the manufacturers. The plate seals may require replacement from time to time and here the manufacturers' instructions should be closely followed

73. By which of the following indication, can we conclude that the lube oil-sea water heat exchanger is unduly fouled?

A. the heat exchanger lube oil inlet temperature lowering

B. the heat exchanger sea-water outlet pressure rise

C. the heat exchanger temperature difference between lube oil and sea water increasing

D. the heat exchanger pressure difference between sea water inlet and outlet decreasing

74. What is the most usual reason for the fresh water-sea water heat exchanger fouling in the sea side?

A. lube oil sludge accumulating in it

B. dirt and scale etc., formed on the surfaces

C. deformation of the tubes and the shell or the plates

D. lube oil leakage into sea-water side

75. According to the passage, it is recommended that the heat exchanger side be cleaned by .

A. flushing with chemical solvent without being dismantled

B. brushing mechanically after being disassembled

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C. flushing with flesh water only

D. flushing with clean oil only

76. According to the passage, which of the following statement is not true?

A. the heat exchanging surfaces should be kept substantially clean

B. the heat exchanger flow passages should be clear of obstruction

C. seals for the plate heat exchanger needs to be renewed often

D. the cleaning process of the plate heat exchanger should be done following our experiences only

中华人民共和国海事局

2008 年第 1 期海船船员适任证书全国统考试题(总第 45 期)

科目：轮机英语　　试卷代号：803

适用对象：无限、近洋航区 3000KW 及以上船舶大管轮

（本试卷卷面总分 100 分，及格分为 70 分，考试时间为 100 分钟）

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八、　单项选择题：

1. _____ the engines, the diesel engine is ____ used engine on board.

A. Between / more commonly　　B. Among / the most commonly

C. Between / not more commonly　　D. Among / not the most commonly

2. Piston cooling fins are located　　.

A. atop the piston crown　　B. beneath the piston crown

C. at the base of the piston skirt　　D. inside the cylinder liner cooling water jacket

3. Which of the following conditions is realized by the turbo-charging of a previously naturally aspirated diesel engine?

A. Ignition lag increases.　　B. Lube oil system pressure increases.

C. Brake specific fuel consumption increases.　　D. Mechanical efficiency increases.

4. Which of the following represents the significance the fuel oil cetane number?

A. The cetane number has no affect on injection lag.

B. The cetane number is an indication of the fuel's viscosity.

C. Ignition lag is reduced with fuels having a high cetane number.

D. The cetane number is of little significance in the combustion process.

5. Indirect cooling of fuel injector nozzle holders for diesel engines is accomplished primarily by

A. heat conduction into the injected fuel oil

B. heat conduction into the water jacket wall

C. water circulation through passages in the holder

D. fuel oil circulation through passages m the holder

6. The upper piston rings m large, slow-speed, two-stroke/cycle diesel engines are most effectively lubricated by oil ____.

A. fed from mechanical lubricators　　B. thrown off from the main bearings

C. supplied from wick fed drip lubricators　　D. flow from a centrifugal or banjo oiler

7. In a diesel engine closed freshwater cooling system, the amount of coolant flowing through the heat exchanger is controlled by the __.

A. suction pressure regulator　　B. thermostatic bypass valve

C. sea water temperature　　D. water level in the expansion tank

8. Exhaust gases are generally removed from the cylinders of a two-stroke/cycle diesel engine by　　.

A. natural aspiration　　B. masked intake valves

C. air ceils　　D. scavenging air

9. Vessels having main engines arranged for air starting are to be provided with at least__.

A. one automatic drain serving both containers

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B. two air starting containers of approximately equal size

C. one control air container and one starting air container

D. one additional means of starting the main engine

10. When the prime movers of two paralleled generators are equipped with mechanical-hydraulic governors, and are operating within their designed range, the unit with the least amount of speed droop will .

A. pick up more of any increase in load

B. pick up less of any increase in load

C. share an equal amount of any increase in load

D. drop an equal amount of any decrease in load

11. Exhaust gas pyrometers are useful for .

A. detecting faulty combustion in individual cylinders

B. adjusting fuel racks to maintain equal loading between cylinders

C. adjusting the load limit setting of the governor at idle conditions

D. calculating engine horsepower

12. When the ships is going to enter into the harbor .

A. change from heavy fuel oil to diesel oil for main engine

B. pumping out bilge water

C. change sea chest form high level one to lower level one

D. test emergency generator

13. If the jacket water temperature rises rapidly above normal in a diesel engine, you should first .

A. place standby cooler in operation B. reduce engine load

C. check thermostatic valve D. clean sea water strainer

14. When using a fuel with a higher than normal sulfur content in an auxiliary four stroke diesel engine, you may .

A. maintain higher than normal jacket water temperature

B. change the lube oil more frequently than normal

C. maintain a higher air-box temperature than normal

D. maintain a higher air-box pressure than normal

15. A crack in a cylinder liner can be caused by .

A. worn piston rings B. installation of undersized sealing rings

C. operating the engine at low loads D. restricted cooling water passages

16. In a diesel engine, when refitting piston rings you should .①check the ring gap at the smallest diameter of the cylinder ②remove carbon from the ring groove

A.① B.② C. ①② D. neither ① nor ②

17. Which of the following problems is the main source of fuel pump and injection system malfunctions?

A. Improper lubrication B. Air in the fuel system

C. Coated fuel lines D. Excessive vibration

18. Which of the following problems can occur if you continually fail to drain off condensate from a starting air receiver?

A. Corrosion and eventual failure of the tank.

B. Gumming of the tank relief valves.

C. Immediate failure of components downstream of the compressed air system.

D. Boiling of the water oil mixture as pressure is reduced.

19. A large change in ambient temperature, or using an oil of a viscosity different than the one recommended by the manufacturer in a mechanical hydraulic governor, will result in the need to adjust the .

A. pilot valve opening B. compensating needle valve

C. compensating spring tension D. accumulator spring tension

20. Oil oxidation as a result of excessively high lube oil temperature, is harmful to a diesel engine

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Because .

A. oil foaming will always occur B. large quantities of oil are consumed

C. lube oil viscosity is always decreased D. corrosive by-products are usually formed

21. A dry-type spark arrestor removes sparks from a diesel engine exhaust by ____.

A. increasing the linear velocity of the exhaust gases

B. changing directions of exhaust gas flow

C. decreasing the temperature of the exhaust gases

D. accelerating the exhaust gas through a reduced size orifice

22. If the engine does not start on air, it may be due to .

A. low compression of the fuel pumps B. incorrect timing of fuel pumps

C. the starting air valves stuck D. air-locks in fuel oil pipeline

23. A sudden power loss from a turbocharged and after-cooled diesel engine is an indication of a/an .

A. turbocharger malfunction or failure B. crankcase exhauster overload

C. overload on the intercooler D. obstruction in the engine cylinders

24. A controllable pitch propeller on a diesel driven vessel eliminates the need for .

A. friction clutches B. disconnect clutches C. reversing gears D. reduction gears

25. To prevent excessive __ in the transverse girders, the tie bolts are positioned as close to the center of the crankshaft as possible.

A. thermal stresses B. bending moments C. thermal loads D. surface tensions

26. Compared to a constant pitch propeller, a controllable pitch propeller .

A. more efficiently uses available engine power

B. operates at a lower efficiency at a fixed speed

C. produces the same torque at lower engine power

D. develops its rated power at a lower speed

27. The oil index of main engine should be controlled to prevent it from ____ in heavy weather.

A. over heat B. over speed C. over pressure D. over worn

28. In the navigation, cause the shafting over load most easily.

A. stopping the main engine suddenly

B. changing the main engine running direction suddenly

C. the sailing from the shallow water area to the deep water area

D. the ship's trim too much

29. A magnetic strainer is used in the diesel engine reduction gear oil system to remove small particles of .

A. water B. babbitt C. iron or steel D. acids

30. The temperature of the refrigerant in the evaporator coil depends mostly upon the ___.

A. refrigerant pressure in the evaporator B. cooling water temperature to the condenser

C. heat load in the refrigerator compartment D. solenoid valve in the liquid line

31. Excessive oil foaming in the crankcase of a refrigeration compressor is most likely to occur when the compressor .

A. has run continuously for a long period B. suction pressure is below normal

C. oil level is below normal D. starts after a long idle period

32. In the presence of an open flame or hot surfaces, chlorinated flourocarbon refrigerants decomposes and form .

A. petroleum crystals B. phosgene gas C. water vapor D. carbon monoxide

33. Some refrigeration systems have chemical moisture indicators installed in conjunction with the sight glass in the liquid line. If excess moisture is present in the system, the indicator will .

A. activate the driers B. change color

C. secure the compressor D. add a predetermined amount of liquid drier

34. If a refrigeration compressor is short cycling on high head pressure, you should .

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A. purge the condenser if the waterside is dirty

B. check for proper water flow through the condenser

C. increase the high pressure cutout setting

D. reduce the cooling water flow

35. Low compressor head pressure in a refrigeration system can be caused by ___.

A. insufficient condenser cooling water B. excessive condenser cooling water

C. air in the refrigeration system D. excessive refrigerant in the system

36. To ensure oil purifier working in normal condition, the interval between two sludge discharging should not exceed hours.

A. 2 B. 4 C. 5 D. 6

37. One of the reasons that causes oil flowed from sludge outlet of a self-cleaning purifier is .

A. seal water supply be cut off B. make-up water supply be cut off

C. oil outlet valve closed or not open sufficiently D. the flow rate of oil is too much

38. Among the basic categories of equipment, which of the following are used to allow the hydraulic energy to be controlled?

A. hydraulic pumps B. valves C. hydraulic cylinders D. hydraulic motors

39. Positive displacement, helical gear pumps are well suited for pumping oil because .

A. stuffing boxes eliminate the leakage problems usually associated with other gear pumps

B. it is not necessary to closely maintain design clearances with this pump

C. they are essentially self-priming and produce a high suction lift

D. these pumps are designed with extreme tooth angles

40. The in the steering gear move the rudder to the required angle.

A. control equipment B. power unit

C. transmission mechanisms D. fittings and pipeline

41. Air trapped in the hydraulic fluid of a steering system may be indicated by .

A. the steering pumps overspeeding

B. a jammed open relief valve

C. a constantly occurring improper rudder response

D. excessive ram pressure

42. The ability of lubricating oils to resist viscosity changes during temperature changes is indicated by the ____.

A. American Petroleum B. Institute number viscosity index number

C. Seconds Saybolt Furol number D. Seconds Saybolt Universal number

43. Before doing any work on a hydraulic system equipped with accumulators, you should .

A. drain the accumulators and purge with oxygen

B. bleed off all stored energy from the accumulators completely

C. charge the accumulators to prevent system energy loss

D. pump the hydraulic fluid into the accumulators to prevent fluid loss

44. In a modern three-phase A.C. synchronous brushes generator, the excitation winding is on the rotor. That means .

A. The generator need not excitation.

B. The winding on the rotor is for inputting excitation current.

C. There are three phase windings on the rotor.

D. The generator has no brushes.

45. The magnetic field is provided by electromagnets so arranged that adjacent poles have ___.

A. opposite polarity B. the same polarity C. negative polarity D. positive polarity

46. An alternator is being paralleled with one on the line. At the instant the circuit breaker is close, the frequency of the incoming alternator will normally .

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A. increase B. not change C. decrease D. be exactly 60 hertz

47. The division of kilowatt load between two paralleled alternators is determined by the .

A. amount of field excitation of the leading machine

B. load-speed characteristics of the governors

C. amount of field excitation to the lagging machine

D. type of alternator

48. Electric insulation is made of organic substances and so gradually with age.

A. deteriorates B. increases C. are fouled D. becomes better

49. After a ship enters service it is for the main bus-bar to be made dead.

A. usually B. commonly C. exceptional D. unavoidably

50. Usually, emergency electricity supplies to on board.

A. Cargo winch B. Windlass C. Steering gear D. Main air compressor

51. The control mode in which tile final control element is moved from one of two fixed positions to the other is known as .

A. dead band action B. neutral zone action C. range D. on-off action

52. The is used to measure the volume of a liquid or gas through a pipeline within any given period of time.

A. flow-meter B. viscometer C. micrometer D. feeler

53. The seven segment arrangement for numerical(数字的) display on consoles, test meters and other applications can be either .

A. UJT or BJT B. BCD or OCD C. JFET or IGFET D. LED or LCD

54. Which of the following is operated from the main engine room console on an automated vessel?

A. Fire pump and lube oil pump B. Lube oil pump and distilling plant

C. Distilling plant and shaft alley door D. Shaft alley door and fixed CO2 release

55. Before engaging the turning gear and turning the diesel engine, which of the following operation should be done except .

A. open the indicator cocks

B. supply some CYL.Oil to cylinder liner wall with lubricator (only for two stoke diesel engine)

C. put the fuel handle in the "stop" position

D. pump up the air bottle

56. During the watch keeping at sea, the engineer in charge should notify in the event of any serious occurrence or a situation where he is unsure of the action to take.

A. the master B. the chief engineer

C. the bridge D. the company superintendent

57. When the ship, its main propulsion device equipped with clutch, arrived at the port and finished with the engine, the correct operation should be .

A. disengaging the clutch firstly, then stopping the main engine

B. stopping the main engine firstly, then disengaging the clutch

C. stopping the cooling water pump firstly, then stopping the main engine

D. stopping the main engine and disengaging the clutch at the same time

58. Which of the listed conditions can be considered as the single greatest cause of accidents?

A. Speed B. Excessive knowledge or skill

C. Human error D. Excitement

59. An example of class 'A' fire is a/an .

A. electrical fire in the engine room B. oil fire in the engine room bilges

C. oil fire involving a grade 'A' petroleum product D. mattress fire in a crew's cabin

60. Which of the following conditions is true concerning a flammable liquid with a concentration above the upper explosive limit?

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A. The mixture is too lean to burn. B. The mixture is too rich to burn.

C. The vapor is about to explode. D. Conditions are perfect for combustion.

61. One of the disadvantages of using carbon dioxide to extinguish a fire in an enclosed space is .

A. the 'snow' which is sometimes discharged along with the gas is toxic

B. prolonged exposure to high concentrations of CO2 gas causes suffocation

C. rapid dissipation of the CO2 vapor

D. the CO2 gas is lighter than air and a large amount is required to extinguish a fire near the deck

62. While on watch in the engine room, you hear a continuous sounding of the general alarm. Which of the following actions should yon take?

A. Make an entry in file official logbook.

B. Open the master control valves on the fixed CO2 system.

C. Start the fire pump and check discharge pressure.

D. Secure auxiliary condenser overboard discharge.

63. All crew's assigned emergency stations can be found on the ship's .

A. muster list B. certificate of inspection

C. clearance papers D. permit to proceed

64. As for turbine oil, contact with water in the form of steam will be inevitable so good properties will be essential.

A. defrosting B. de-oiling C. demulsifying D. dehumidifying

65. The purpose of treating the cooling water of the diesel engine is to . I. resist the scale formation in the cooling chamber II. lubricate the engine part III. increase thermal capacity IV. resist corrosion

A. I+ II B. II +III C. III+IV D. I +IV

66. A is the documentary attestation for the delivery of stores and spare parts.

A. engine logbook B. delivery docket C. store booklet D. maintenance book

67. , where the ship is docked for hull coating renewal, and for any other required underwater work to be carried out, when the opportunity is taken to make other repairs.

A. Voyage repairs B. Routine docking C. Damage repairs D. Conversion

68. During the dock repair, should be measured firstly before tail shaft drawn out.

A. the sinking of tail shaft B. the clearance of stern bearing

C. the total flexure of shaft D. main engine crankshaft deflection

69. During sea trial, the main engine will be kept run at load.

A. 100% B. 110% C. 85% D. different

70. The correct tightening is obtained by the use of to measure the extension given to the bolts.

A. pressure gauges B. thermometers C. stretch gauges D. bridge gauges

71. Which of the following operations need NOT to be entered on the Oil Record Book Part I? I. Disposal of oil residues. II. Internal transfer of fuel oil

A. I only B. II only C. both I and II D. neither I nor II

72. During the PSC inspection, under the provision of SOLAS74, which one may not be regarded as clear grounds for ships' detainment?

A. excess amount of oily-water mixtures in bilges

B. insulation of piping including exhaust pipes in engine room contaminated by oil

C. improper operation of bilge pumping arrangements

D. paint peeling off the uptake

73. The fire drill must, as far as practicable, be conducted as if .

A. there is a minor emergency B. there is an actual emergency

C. there were a minor emergency D. there were an actual emergency

74. The Convention is the first to establish basic requirements on training, certification and watch-keeping for

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seafarers on an international level.

A. STCW78 B. STCW95 C. SOLAS74 D. SOLAS88

75. The officer in charge of the engineering watch shall notify the chief engineer without delay ____.

A. in any emergency or if in any doubt as to what decision or measures to take

B. in the event of any impending action in machinery spaces that may cause reduction in ship's speed

C. when isolating and bypassing machinery to be worked on

D. co-operating with any engineer in charge of maintenance work

76. The bridge should inform the engine room before passing through congested or shallow waterway.

A. 24 hours B. 2 hours C. 1 hour D. 15 minutes

77. In cleaning up an oil spill, the use of chemical agents would .

A. absorb the oil for easy removal B. remove the oil from the water

C. disperse or dissolve the oil in the water D. not affect the oil

78. According to the international regulations concerning the prevention of pollution of sea areas from ships, the disposal into the sea of all plastics is .

A. welcome B. admitted in some special sea areas

C. prohibited D. acceptable

79. International Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk (IGC Code) of .

A. SOLAS B. MARPOL C. STCW D. Ballast Water convention

80. According to the ISM CODE, the "person" in the phrase 'to designate a person or persons ashore having direct access to the highest level of management' refers to .

A. the manager of the shipping company B. the master of the ship

C. the designated person on board ship D. the designated person ashore

81. Each ship shall carry on board a ship security plan approved by .

A. the chief engineer officer B. the master of the ship

C. the manager of the company D. the Administration

82. The installation and provision of fire fighting equipment is mainly subject to ___.

A. ISM code B. ISPS code C. IBC code D. FSS code

二、关联题（关联题题干下有 4 个小题，每小题 4 个选项）

第一组

Older loop scavenged engines may have a single injector mounted centrally in the cylinder head. Because the exhaust valve is in the center of the cylinder head on modern uniflow scavenged engines the fuel valves (2 or 3) are arranged around the periphery of the head. The pressure at which the injector operates can be adjusted by adjusting the loading on the spring. The pressures at which the injectors operate vary depending on the engine, but can be as high as 540 bar. Some injectors have internal cooling passages in them extending into the nozzle through which cooling water is circulated. This is to prevent overheating and burning of the nozzle tip. Injectors on modern engines do not have internal cooling passages. They are cooled by a combination of the intensive bore cooling in the cylinder head being close to the valve pockets and by the fuel which is re-circulated through the injector when the follower is on the base of the cam or when the engine is stopped. As well as cooling the injector, re-circulating the fuel when the engine is stopped keeps the fuel at the correct viscosity for injection by preventing it from cooling down. Fuel injectors must be kept in good condition to maintain optimum efficiency, and to prevent conditions arising which could lead to damage within the cylinder. Injectors should be changed in line with manufacturers' recommendations, overhauled and tested. Springs can weaken with repeated operation leading to the injector opening at a lower pressure than designed. The needle valve and seat can wear which together with worn nozzle holes will lead to incorrect atomization and dribbling.

83. Modern uniflow scavenged engines have .

A. a single injector mounted in the center of the cylinder head

B. several injectors mounted around the external boundary of the cylinder head

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C. a single injector mounted at the external boundary of the cylinder head

D. several injectors mounted in the center of the cylinder head

84. Cooling water is circulated through in some injectors.

A. the nozzle B. the nozzle tip

C. the internal passages D. the fuel re-circulated

85. Re-circulating the fuel when the engine is stopped can .①keep the fuel at the correct viscosity ②cool the injector

A. ① B. ② C. ①② D. neither ① nor ②

86. Springs in fuel injectors will become not strong enough to work because .

A. the injector opens at a lower pressure than designed

B. the needle valve and seat wear out

C. the nozzle holes wear out

D. long time in use

第二组

Displacement pumps are those where the volume of the pump chamber is alternately increased to draw the liquid in from the suction pipe and then decreased to force the liquid out into the delivery pipe. Centrifugal pumps are those wherein an impeller rotating at high speed throws the liquid by centrifugal force from the center to the periphery of the impeller where the liquid is discharged through the delivery outlet.

Gear pump consists of two or more meshing gears (spur, single or double helical teeth) enclosed m a close-fitted housing. These are used extensively for pumping fuel oil, lubricating oil and hydraulic oil. When gears are unmeshed on the inlet side, a pressure drop occurs that helps the atmospheric pressure acting on the surface of the oil in the reservoir to force it up the pipe to fill the void, the oil is then transferred around the periphery of the pump housing. As the gear teeth mesh again on the outlet side, they form a seal that prevents oil from backing up to the inlet, the oil in the void is then be forced out into the discharge line.

All vane pumps have a rotor driven within a ring (cam ring) by a drive shaft coupled to a prime mover. A cylindrical rotor with sliding vanes, generally in radial slots, rotates within the ring. The center of the rotor is offset from the center of the ring. In a simple vane pump, as the rotor turns, the vanes are forced outward against the inner surface of the cam ring by centrifugal force. This outward radial movement of the vanes and turning of the rotor causes the chamber between the vanes to increase as the vanes pass further away from the inlet port. This increase in volume results in a lowering of pressure until the atmospheric pressure is sufficient to force oil from the reservoir into the inlet chamber. Oil from the inlet is swept away by the vanes toward the outlet port through a decreasing series of chambers until it is forced through the outlet port. A vane pump of balanced design has an elliptical cam ring so that two pumping chambers are formed. This pump is in hydraulically balance, since the two intake and two outlet ports are diametrically opposed to each other. Therefore the side loads exerted on the rotor cancel out, thereby increasing bearing lift and permitting high operating pressure.

87. According to the last sentence of paragraph 1, from where the liquid is discharged through the delivery outlet?

A. from the eye of the impeller

B. from passage of impeller

C. from the periphery of the impeller

D. from the impeller

88. Which statement is NOT true?

A. In a simple vane pump, the rotor and cam ring are exactly concentric

B. Balanced vane pump has an elliptical cam ring

C. Liquid in both gear pump and vane pump are forced out to the outlet.

D. Balanced vane pumps can work at a higher pressure than the simple vane pump

89. Gear pumps are widely used to transfer any one of the following but .

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A. fuel oil

B. lube oil

C. hydraulic oil

D. fresh water

90. Which statement is NOT true?

A. While displacement pump works, volume of the working chamber will increase and decrease alternately

B. A gear pump always has two gears.

C. Any vane pump will have a rotor within a ring

D. A balanced vane pump has two outlet ports and they are positioned symmetrically.

第三组：

Ship recycling contributes to sustainable development and is the environmentally friendly way of disposing of ships with virtually every part of the hull, machinery, equipment, fittings and even furniture being re-used. However, while the principle of ship recycling is a sound one, the reported status of working practices and environmental standards in recycling facilities often leaves much to be desired. Such growing concerns about environmental safety, health and welfare matters in the ship recycling industry have resulted in a growing belief that an international instrument to regulate the ship recycling process is urgently needed.

Having become aware of the need to reduce the environmental, occupational health and safety risks related to ship recycling, as well as the need to secure the smooth withdrawal of ships that have reached the end of their operating lives, the International Maritime Organization (IMO) has taken action to develop a realistic and effective solution to the problem of ship recycling, which will take into account the particular characteristics of international maritime transport and the economic realities.

91. Which statement of the following is true?

A. Ship recycling is sustainable.

B. Ship recycling is very friendly to our environment.

C. Ship recycling is the best way to dispose the machinery, equipment, fittings and even furniture on board.

D. Ship recycling brings many problems concerning environmental safety, health and occupational safety.

92. Which information is not given in the text?

A. Ship recycling contributes to sustainable development.

B. The IMO believes that making an international instrument to regulate the ship recycling process is urgently in need.

C. An international convention on ship recycling has been adopted.

D. The IMO has taken action to develop an effective solution to the problem of ship recycling.

93. What is the best explanation to the underline phrase "to secure the smooth withdrawal of ships"?

A. To withdraw a ship mid make it in a safe condition.

B. To secure the life of a ship and recycle it.

C. To break a wreck.

D. To finish the service of a ship and break it without other problems.

94. What is the main problem lied in the ship recycling industry?

A. It lies in the sustainable development.

B. It is about how to recycle the ship as they can as possible.

C. It is a big problem concerning environment, safety and health.

D. The big problem is that ship-recycling will violate the regulations made by IMO.

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科目：轮机英语　　试卷代号：803
适用对象：无限、近洋航区 3000KW 及以上船舶大管轮
（本试卷卷面总分 100 分，及格分为 70 分，考试时间为 100 分钟）

答题说明：请选择一个最合适的答案，并将该答案按答题卡要求，在其相应位置上用 2B 铅笔涂黑。第 1 题至 82 题，每题 1 分，第 83 题至 94 题，每题 1.5 分。

九、　单项选择题：

1. The reason why more and more of the large merchant vessels are being powered by medium-speed diesel engines is .
   A. they operate between 150 and 450 rpm
   B. they are connected to the propeller by gearing
   C. their smaller size and weight
   D. they can be connected directly to the propeller without gearing
2. The SMS should provide for specific measures aimed at promoting the of equipment or systems, the sudden operational failure of which may result in hazardous situations.
   A. visibility　B. ability　C. reliability　D. capability
3. If all other conditions such as bore, stroke, speed, and mean effective pressures are equal, a two-stroke/cycle diesel engine will develop approximately .
   A. the same indicated horsepower as a four-stroke/cycle engine
   B. twice the indicated horsepower as a four-stroke/cycle engine
   C. one half the indicated horsepower as a four-stroke/cycle engine
   D. one power stroke for every two crankshaft revolutions
4. The desirable properties of a marine fuel oil should include .
   A. high flash point and high viscosity　B. low flash point and high viscosity
   C. low heating value and high sulphur content　D. high heating value and low sulphur content
5. The plunger in a jerk pump is rotated until the release port is uncovered. If the port remains uncovered all of the time, which of the listed operations will occur?
   A. No fuel will be delivered.
   B. The maximum effective stroke will be attained.
   C. The fuel delivered to the cylinder will be excessive.
   D. The injection nozzle will overheat and carbonize.
6. In an engine with a pot-shaped piston, some lubricating oil from the main bearing will pass along a drilled passage in the crankshaft to the bottom end bearing and then up a connection rod to the .
   A. crosshead　B. crankpin　C. crank journal　D. gudgeon pin
7. Due to action of pistons some relative motion between parts in contact in the coolant supply and return system must occur.
   A. reciprocating　B. rotating　C. running　D. removing
8. What is the function of the after-coolers installed in the diesel engine air intake system?
   A. Decrease the air density　B. Increase the exhaust temperature
   C. Decrease the lube oil temperature　D. Increase the air density
9. Diesel engines are started by supplying into the cylinders in the appropriate sequence for the required direction.
   A. cooling water　B. compressing air　C. compressed air　D. cylinder oil
10. If the compensating needle valve of a hydraulic governor is opened more than necessary the governor will .
   A. have a larger than normal dead band
   B. produce excessive speed response to a load change
   C. respond slowly to any change in engine load

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D. stabilize engine speed at the new governor setting

11. By comparing the exhaust gas temperature of each cylinder, the operator can determine if the load is balanced throughout the engine. The device most commonly used is a .

A. tachometer B. pyrometer C. dynamometer D. calorimeter

12. The most crucial time for any bearing with regards to lubrication is .

A. during low loads B. after proper oil viscosity is reached

C. during starting D. after cleaning filters

13. For most diesel propulsion and generator engines, the over-speed trip device will stop the engine by .

A. moving the governor control to stop B. shutting off the lubricating oil supply

C. tripping the governor emergency stop lever D. shutting off the fuel supply

14. For a continuous operation diesel engine, a duplex filter unit would be the best arrangement because .

A. changing filter elements would not interrupt engine operation

B. filtering occurs twice in each pass of oil through the system

C. clogging will not occur

D. dropping pressure is half of that through a single filter unit

15. A crack in a cylinder liner can be caused by .

A. worn piston rings B. installation of undersized sealing rings

C. operating the engine at low loads D. restricted cooling water passages

16. Low compression in a diesel engine could be caused by .

A. worn or broken cylinder liner sealing rings B. high cooling water temperature

C. worn or broken piston rings D. low fuel oil pressure

17. If you suspect a diesel engine is misfiring due to air leakage into the fuel system, you should begin looking for the leak at the .

A. fuel line connections to the cylinder injection valves

B. gasket surfaces of the fuel oil filters

C. discharge fittings of the fuel injector pumps

D. suction side of the fuel oil transfer pump

18. If fuel injection to a four-stroke/cycle diesel engine begins earlier than designed, ignition may be delayed because the .

A. cylinder compression pressure may not be high enough

B. cylinder compression temperature may be too high

C. fuel oil injection pressure may not be high enough

D. scavenge and purge process is incomplete

19. The main propulsion diesel continues running after you try to shut down. You should now attempt to .

A. stop the fuel oil booster pump B. engage the jacking gear

C. secure the lube oil pump D. shut off the fuel at the settling tank

20. If an auxiliary diesel engine coolant temperature is higher than normal, but the thermostat is determined not to be defective, you would suspect a/an .

A. cavitation erosion in the water jackets B. excess corrosion inhibitor in the coolant

C. dirty jacket water cooler D. defective turbocharger

21. Crankcase explosions in propulsion diesel engines result from ____.

A. the splashing of lubrication oil by the crankshaft

B. the dilution of crankcase oil with particles of combustion

C. broken fuel lines spraying oil on the crankcase

D. the ignition of unburned fuel and air in the crankcase

22. If the engine does not start on air, it may be due to .

A. low compression of the fuel pumps B. incorrect timing of fuel pumps

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C. the starting air valves stuck D. air-locks in fuel oil pipeline.

23. If some of the cylinders are not firing, the ones affected may be determined by watching .

A. the exhaust temperature B. the exhaust pressure

C. the governor D. the fuel flow meter

24. When transmitted by a reduction gear, diesel engine speed is reduced and the torque available for work .

A. remains the same B. is reduced C. is increased D. is eliminated

25. A thrust bearing is used with a propulsion diesel engine to ____.

A. control axial movement of the crankshaft

B. transmit engine thrust to the propeller shaft

C. absorb vibrations in the propeller shafting

D. prevent propeller thrust from being transmitted to the hull

26. Propeller pitch speed minus ship speed divided by the propeller pitch speed is termed ___.

A. apparent slip B. true slip C. pitch D. propulsive efficiency

27. Cold weather starting of a diesel engine is more difficult than warm weather starting due to .

A. use of low viscosity oil in cold weather

B. increased moisture content of inlet air in cold weather

C. increased drag of pistons and bearings due to increased oil viscosity

D. higher compression pressures reached due to smaller clearances existing in the engine during cold weather

28. While sailing in ballast under normal weather and sea condition, the basic parameter which is used to restrict the fuel injection of main engine is .

A. the exhaust temperature B. the speed of main engine

C. the turbine rotation speed D. the power of main engine

29. The bearing of tailshaft sealing equipment which adopts the oil nature circulation is hot, the reason is .

A. the rotate speed fluctuation B. the ventilation tube clogged

C. the main engine accelerate so fast D. stormy waves

30. Moisture is removed from a refrigeration system by .

A. bleeding refrigerant from the condenser B. opening a drain petcock on the oil separator

C. condensing the water in the heat exchanger D. using a dehydrator cartridge

31. When checking zinc plates in the refrigerating system condenser, you should .

A. paint and insulate the plates to prevent corrosion

B. renew the plates at each inspection

C. replace the zincs if deteriorated by 50%

D. file the plates to change the negative value

32. When replacing a thermostatic expansion valve sensing bulb, it is necessary to .

A. apply a light film of oil to increase heat transfer

B. apply a light film of oil to prevent oxidation

C. apply a heavy coating of grease to function as a heat sink

D. carefully coat the device with silicone sealant to reduce the effects of convective cooling

33. If the refrigeration compressor crankcase is sweating, the cause may be due to .

A. a shortage of refrigerant

B. the compressor running continuously

C. liquid refrigerant returning to the compressor

D. the compressor short cycling on the high pressure cutout

34. If a refrigeration compressor is short cycling on high head pressure, you should .

A. purge the condenser if the waterside is dirty

B. check for proper water flow through the condenser

C. increase the high pressure cutout setting

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D. reduce the cooling water flow

35. If the head pressure of a reciprocating refrigeration compressor is excessive, .

A. the relief valve should open before the high pressure cutout

B. the relief valve should open and allow the excess refrigerant to flow to the receiver

C. the high pressure cutout switch should operate before the relief valve opens

D. you should close the discharging valve

36. Which factor determines the ring dam size for a fuel oil, tubular bowl type, centrifugal purifier?

A. The viscosity of the fuel.

B. The quantity of water to be removed from the fuel.

C. The specific gravity of the fuel.

D. The quantity of dirt to be removed from the fuel.

37. If the bowl of a disk type centrifugal purifier when operated as a separator is not primed, the .

A. oil has a tendency to emulsify in the bowl

B. purifier will act as a clarifier at the discharge ring

C. oil will be lost through the water discharge ports

D. oil solids will be deposited only at the intermediate top disk

38. Among the basic categories of equipment, which of the following are used to allow the hydraulic energy to be controlled?

A. hydraulic pumps B. valves C. hydraulic cylinders D. hydraulic motors

39. The delivery rate of an axial piston hydraulic pump is controlled by varying the position of the .

A. tilting box B. slide block C. pintle D. reaction ring

40. With reference to a two-ram actuating mechanism, which one of the following statement is FALSE?

A. The rams work inside cylinders.

B. The cylinders have glands sealing their open ends.

C. The rams are connected to a cross-head.

D. The cross-head is mounted on the rudder stock.

41. While inspecting the steering system at sea, you should check for .

A. air bubbles in the sight glass B. any leaks in the system

C. over-travel in the rudder angle indicator D. lost motion in the rams

42. An additive used to improve the ability of a lube oil to reduce friction is known as a/an .

A. suppressant additive B. dispersant additive

C. extreme pressure additive D. viscosity improver additive

43. If you install a new hydraulic hose in a hydraulic system, the hose must be long enough to allow for contraction to prevent .

A. failure of the hydraulic hose B. excessive flow through the line

C. friction in other areas of the hydraulic system D. overheating of the hydraulic fluid

44. The output voltage of a 440 volt, 60 hertz, AC generator is controlled by the .

A. prime mover speed B. exciter output voltage

C. load on the alternator D. number of poles

45. An electrical device which employs a stationary armature and a rotating electromagnetic field is used aboard as a .

A. magnetic amplifier B. ship's service alternator

C. three-wire DC generator D. saturable core reactor

46. The operation of paralleling two alternators requires the voltages to be _____ and also in phase.

A. zero B. eliminated C. different D. equal

47. The frequency of an AC generator is controlled by the .

A. rheostat B. governor C. exciter D. capacitor

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48. The first requirement for logical troubleshooting of any system is the ability to .

A. collect all available data on a casualty B. recognize normal operation

C. identify the probable cause of a symptom D. isolate the faulty component

49. is supplied with electricity by main switchboard directly not through sub-board on board.

A. Deck machinery B. Little power load

C. Some important load machinery D. Stationary submersible pump

50. Usually, emergency electricity supplies to on board.

A. Cargo winch B. Windlass C. Steering gear D. Main air compressor

51. control system is one in which the control action is independent of the output.

A. Feed back B. Negative feed back C. Close loop D. Open loop

52. The is a crystal which, under pressure, produces an electric current which varies with the pressure.

A. alternator B. glass thermometer

C. bourdon tube D. piezoelectric pressure transducer

53. Modern handheld digital tachometers operated by counting light pulses returned to the unit by .

A. the tach generator B. either the coupling or shaft

C. a small bulb attached to the shaft D. a piece of reflective tape

54. UMS stands for .

A. ultra much space B. universal medium system

C. unit machined space D. unattended machinery space

55. "Stand by an engine" means .

A. "prepare to stop the engine" B. "assemble an engine on its bedplate"

C. "make an engine ready for starting" D. "dismantle an engine"

56. At the beginning of the watch the current operational parameters and the condition of all machinery should be verified and also the log readings should correspond with those .

A. noted by the bridge officer B. told by last duty engineer

C. observed D. in the instruction manual

57. After the order ' ' is given, the air system is shut down, the turning gear put in.

A. Finished With Engine B. Stop the Engine

C. Stand-by Engine D. Slow-down Engine

58. Personnel who are moving or handling material aboard ship should NOT follow which of the listed practices?

A. Signaling that all personnel are clear before lifting or lowering material.

B. Examining material for sharp edges or protruding points before handling.

C. Closing, tagging or securing valves that permit entrance of steam, water, or air into a fitting or other equipment.

D. Throwing materials from high places to the deck.

59. The class of fire on which a blanketing effect is essential to extinguish the fire is .

A. Class 'A' B. Class 'B' C. Class 'C' D. Class 'D'

60. Fire dampers prevent the fire spreading through the process of .

A. convection B. conduction C. radiation D. direct contact

61. Portable carbon dioxide fire extinguishers should be sent ashore to be recharged .

A. when the remaining charge volume is less than 90 percent of the required volume

B. at each inspection for certification

C. at each annual inspection

D. when the weight loss exceeds 10% of weight of charge

62. While on watch in the engine room, you hear a continuous sounding of the general alarm. Which of the following actions should you take?

A. Make an entry in the official logbook.

B. Open the master control valves on the fixed CO2 system.

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C. Start the fire pump and check discharge pressure.

D. Secure auxiliary condenser overboard discharge.

63. After a fire has been extinguished in a closed space, personnel may safely enter the space when .

A. smoke density has been decreased sufficiently to see the bulkhead opposite the compartment's entrance

B. a lifeline and explosion proof flash light are used

C. all smoke and toxic fumes are removed and an adequate oxygen supply is present

D. overhaul has been completed to remove any possible source of re-ignition

64. When adding oil to a refrigeration system, precautions must be taken to ensure that .

A. the compressor suction pressure is not too high

B. all air is purged from the pump and charging fittings

C. the high pressure cutout switch is held open to prevent accidental starting

D. the condenser is completely shutdown first

65. The cooling water of the diesel engine should be treated with chemical, because it contains .

A. alkali B. acidity C. salinity D. impurity

66. A (An) __ is the documentary attestation for the delivery of stores and spare parts.

A. engine logbook B. delivery docket C. store booklet D. maintenance book

67. Upon the completion of required tests, a ____ should be placed on each extinguisher, showing the date and the person who completed the tests.

A. cap B. disc C. tag D. cover

68. During the dock repair, when installing the tail shaft and propeller, _____ should be on the spot for supervising.

A. chief engineer B. engineer

C. captain D. any member of the engine department

69. When carrying out mooring trial, if the M.E. can't start normally, you should .

A. take a further inspection in the voyage trial B. check and repair, then retrial

C. do as the surveyor's requirement D. retrial

70. In the initial survey, compiles the survey report and fills in certificate.

A. surveyor B. chief engineer

C. administrator D. company superintendent

71. The International Oil Pollution Prevention Certificate is valid for a period of .

A. one year from the date of issue B. five years from the date of issue

C. three years from the date of issue D. four years from the date of issue

72. Which one is not the 'clear grounds' for a more detailed inspection?

A. the master and the chief engineer are unable to communicate effectively

B. serious corrosion on the hull

C. damaged sanitary pump

D. one page missing in the oil record book

73. "Insufficiency of manning or insufficiency of certification of seafarers" is an identification of a .

A. substandard ship B. standard ship C. over-standard ship D. reference ship

74. STCW 78/95 Convention shall apply to seafarers _____ on board seagoing ships entitled to fly the flag of a Party.

A. served B. serving C. surveyed D. surveying

75. ____ should not undertake any task which will interfere with the supervision duties relating to the main machinery and associated equipment.

A. The watch keeping personnel B. The chief engineer

C. The person on a bunker barge D. The duty deck officer

76. At an unsheltered anchorage the chief engineer officer shall consult with whether or not to maintain an underway watch.

A. the engineer officer in charge of watch B. the deck officer in charge of watch

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C. the master D. the chief mate

77. In the event of a small bunker oil spill on deck occurring while bunkering, you should ____.

A. wash down the area immediately with a fire hose

B. wash down the area with kerosene

C. cover the area with absorbent material

D. cover the area with foam

78. Which statement regarding garbage disposal is correct?

A. Records for ground garbage disposal are not required when disposal into the sea occurs more than 25 miles offshore.

B. Discharging or transfer of garbage while in port to a shore facility must be recorded.

C. Maintaining records for the incineration of garbage aboard ship is not required.

D. The recording of garbage disposal should include the approximate weight.

79. SOLAS Stands for the International Convention .

A. for the Safety of the Life at Sea

B. for the Prevention from ships

C. on Standards of Training, Certification and Watchkeeping for Seafarers

D. for the Control and Management of Ship's Ballast Water and Sediments

80. The requirements of the ISM Code may be applied to .

A. only oil tankers B. only passenger ships C. only containers D. all kinds of ships

81. Each ship shall carry on board a ship security plan approved by .

A. the chief engineer officer B. the master of the ship

C. the manager of the company D. the Administration

82. The installation and prevision of fire fighting equipment is mainly subject to .

A. ISM Code B. ISPS Code C. IBC Code D. FSS Code

二、关联题（关联题题干下有 4 个小题，每小题 4 个选项）

第一组：

When a nominated surveyor or recognized organization determines that the condition of the ship or its equipment does not correspond substantially with the particulars of the Certificate (IOPP) or is such that the ship is not fit to proceed to sea without presenting an unreasonable threat of harm to the marine environment, such surveyor or organization shall immediately ensure that corrective action is taken and shall in due course notify the Administration. If such corrective action is not taken, the Certificate shall be withdrawn and the Administration shall be notified immediately; and if the ship is in a port of another Party, the appropriate authorities of the port State shall also be notified immediately. When an officer of the Administration, a nominated surveyor or a recognized organization has notified the appropriate authorities of the port State, the Government of the port State concerned shall give such officer, surveyor or organization any necessary assistance to carry out their obligations under this regulation. When applicable, the Government of the port State concerned shall take such steps as will ensure that the ship shall not sail until it can proceed to sea or leave the port for the purpose of proceeding to the nearest appropriate repair yard available without presenting an unreasonable threat of harm to the marine environment.

Whenever an accident occurs to a ship or a defect is discovered which substantially affects the integrity of the ship or the efficiency or completeness of its equipment covered by this Annex the master or owner of the ship shall report at the earliest opportunity to the Administration, the recognized organization or the nominated surveyor responsible for issuing the relevant Certificate, who shall cause investigations to be initiated to determine whether a survey as required by paragraph 1 of this regulation is necessary. If the ship is in a port of another Party, the master or owner shall also report immediately to the appropriate authorities of the port State and the nominated surveyor or recognized organization shall ascertain that such report has been made.

83. When a ship is found not fit to proceed to sea by a nominated surveyor, then corrective action should be taken and be informed immediately. (1)the master (2)the authorities of port State (3)the Administration

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A. (1) B. (2) C. (3) D. (1)(2)(3)

84. When a ship were found its equipment does not correspond substantially with the particulars of the Certificate by a nominated surveyor and corrective actions unable to be taken, then .

A. the Certificate would be withdrawn.

B. the ship owner would be fined.

C. the shipping company must be notified immediately.

D. the ship must proceed to the nearest appropriate repair yard for a repair without delay.

85. When a ship were found its equipment does not correspond substantially with the particulars of the Certificate in another Party and corrective actions unable to be taken, then all the following should be taken except .

A. the Certificate would be withdrawn.

B. the Administration should be notified immediately.

C. the appropriate authorities of the port should be notified immediately.

D. the ship should proceed to the nearest appropriate repair yard without delay.

86. In the Second paragraph, the underline word "Who", in such a context, stands for_____.

A. the master or owner of the ship

B. the Administration

C. the Administration, the recognized organization or the nominated surveyor responsible for issuing the relevant Certificate

D. the appropriate authorities of the port State

第二组

Under normal operation, some lubrication oil mist may be discharged from the air compressor to the air start system. This oil may be from excess compressor cylinder lubrication, from faulty oil scraper rings, or may even be suspended oil vapor contaminating the engine room atmosphere and drawn in at the compressor suction. Oil discharge is kept to a minimum by draining the after cooler, air receiver and starting system. If small quantities of lubrication oil do get passed into the starting air system, they will deposit as thin moist film over internal pipe surfaces but are not readily combustible. If a cylinder non-return valve leak while the engine is in operation, some hot gas, possibly with unburned fuel and cylinder lubrication oil, may be blown through the valve to the adjacent air manifold. With further heating from the leaky valve, this, together with the already deposited oil film, will carbonize and form incandescent carbon. If starting air is applied to the system while still hot, the high pressure air coming into contact with the burning carbon may cause an explosion. Such an explosion will cause a flame to pass back through the air start pipe system, evaporating the deposited oil film and igniting it in the presence of air. Very high velocities and shockwaves are generated which may rupture pipes and fittings.

Alternatively, if excessive oil has entered the air start system, a mixture of air and oil droplets may be discharged through the open cylinder non-return valve during starting. This spray may ignite due to high temperatures in the cylinder, causing a flame through the still open valve to the air manifold.

To prevent an explosion, air start valves must be correctly maintained and lubricated to ensure correct timing and free movement with positive closing. Oil in the system must be kept to a minimum, pipe lines must be drained and cleaned internally when necessary and oil discharge from air compressors must be kept to a minimum by good maintenance.

87. The passage is mainly about .

A. crankcase explosion

B. scavenge box fire

C. starting air pipe

D. the danger of explosion in the starting air system

88. According to this passage, if the cylinder non-return valve were not leaky, .

A. an explosion would not be caused

B. there still would be a danger of explosion

C. oil would not deposit in the air pipe

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D. pipe lines would not have to be drained

89. Which of the following is NOT mentioned in this passage?

A. There may be oil vapor in the engine room

B. Pipes and fittings may be damaged if explosion takes place

C. The cooler should be drained

D. Bursting caps must be fitted

90. The word "spray" (underlined in the third paragraph) means .

A. oil mist

B. hot gas

C. injection

D. fuel oil

第三组：

The sewage treatment system must be capable of discharging an effluent that comes within the limits of the tests. Sewage can be treated biologically so that it may be discharged with minimal damage to ecosystem. Biological treatment involves the use of living organisms to treat the sewage within the sewage treatment plant so the liquids and sludge discharged are within the standards specified.

Biological treatment plants are usually built up as a module and consist of various sections. Waste matter collected from the ships sanitary appliances is led through a sanitary piping system to the treatment module. The solid matter is broken up by passing it through a screen or a series of revolving cutters. The broken up solid material, together with the waste liquid, passes into a tank containing bacteria which require oxygen and a nutrient to propagate. The nutrient is contained in the solid waste material, and oxygen is supplied by bubbling compressed air through the broken up waste. The propagated bacteria change the waste material into a sludge by aerobic digestion. The sludge is finally treated to kill the coliform bacteria before it is passed overboard.

When a biological sewage plant is started up, such as when activating a new ship or after cleaning out the tank, a pellet containing bacteria is introduced into the tank. It takes approximately one week for the bacteria to propagate and make the system fully effective. The choice of sanitary appliance cleaners requires extreme care, as many cleaners are toxic to the active bacteria. Once a biological sewage plant is made active it should not be shut down. If it is it will have to be reactivated again because the bacteria will die without a supply of nutrients and oxygen.

Bacteria that require oxygen for their survival are referred to as aerobic. Aerobic bacteria are normally used in ships' sewage treatment equipment. Other forms of bacteria that do not require oxygen are referred to as anaerobic. Anaerobic bacteria are used in shore based sewage treatment works where methane is obtained as a by-product for use as fuel.

91. This passage is mainly about .

A. sewage treatment methods

B. the various sections of a sewage treatment plants

C. biological sewage treatment system

D. how the sewage treatment plants are started up

92. Biological treatment may use __ to treat sewage.

(1)living organisms (2)chemicals (3)additives

A. (1) B. (2) C. (3) D. (1)(2)(3)

93. Sanitary waste matter will .(1)pass through a screen or cutters (2)come into contact with the bacteria in a tank (3)be discharged, normally without bacteria

A. (1) B. (1)(2) C. (2)(3) D. (1)(2)(3)

94. According to the passage, the screen or cutters are fitted to __ (1)kill bacteria (2)break up the solid waste (3)remove solid matter with large size

A. (1) B. (2) C. (2)(3) D. None of (1)(2)(3) is true.

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中华人民共和国海事局
2009 年第 1 期海船船员适任证书全国统考试题(总第 47 期)
科目：轮机英语　　试卷代号：803
适用对象：无限、近洋航区 3000KW 及以上船舶大管轮
（本试卷卷面总分 100 分，及格分为 70 分，考试时间为 100 分钟）

答题说明：请选择一个最合适的答案，并将该答案按答题卡要求，在其相应位置上用 2B 铅笔涂黑。第 1 题至 82 题，每题 1 分，第 83 题至 94 题，每题 1.5 分。
十、　单项选择题：

1. Diesel engines are classified as reciprocating internal combustion engines because they ____.
A. use energy from fuel burned outside their cylinders
B. burn fuel in a combustion chamber that moves back and forth
C. burn fuel in a chamber where its energy moves a piston back and forth
D. use a continuous combustion process to impart rotary motion to the pistons

2. Regarding a Diesel engine crankcase, the general arrangement and installation should preclude the possibility of _____.
A. free entry of air to the crankcase
B. water entering the crankcase while engine wash-downs are being performed
C. excessive oil leakage during periods of increased blow-by
D. sub-cooling internal components

3. One of the factors limiting the amount of load which can be put on a modern marine diesel engine is the _____.
A. governor sensitivity　　B. exhaust temperature
C. fuel injection pressure　　D. speed of the cam shaft

4. Which of the listed factors will indicate the most about the ability of a fuel to ignite in a diesel engine?
A. Viscosity　　B. Sulfur content　　C. Pour point　　D. Cetane number

5. The primary function of a fuel delivery check valve assembly is to_____.
A. deliver proper fuel quantity to the injection nozzle
B. provide rapid fuel injection cutoff
C. control fuel quantity entering the pump body
D. control fuel pressure delivered to the combustion chamber

6. For any piston ring to operate smoothly without scuffing, the ring must be _____.
A. of a material harder than the cylinder liner
B. properly lubricated
C. prevented from compressing
D. prevented from rotating during engine operation

7. Corrosion inhibitors and/or soluble oils are added to diesel engine cooling systems to _____.
A. maintain low pH in the cooling water　　B. reduce the cooling water temperature
C. increase cooling water hardness　　D. form a protective film on metal surfaces

8. In a two-stroke/cycle diesel engine, the process of scavenging begins as the _____.
A. piston nears and passes TDC　　B. latter part of the down-stroke
C. piston passes BDC　　D. early part of the down-stroke

9. The timing of diesel engine air starting valves is controlled by _____.
A. the air start valve timing gears and rods　　B. a cylinder check valve
C. the air distributor　　D. an air manifold poppet valve

10. _____ supplies pilot air to control the cylinder air start valves.
A. An air compressor　　B. An indicator cock　　C. An air distributor　　D. A safety valve

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11. If _____ taken at regular intervals, any unequal distribution of load will be easily found out.

A. differential of crank-webs is B. indicator diagrams are

C. lube oil reading out is D. misalignment of crank-throws is

12. Before shutting off the fuel supply to stop a medium or high–speed diesel engine, why is it necessary to allow the engine to idle for a few minutes?

A. To prevent internal damage from local overheating

B. To ensure the fuel nozzles are flushed clean.

C. To clear the smoke stack.

D. To let the waste heat boiler reduce its rate of steam generation.

13. Auxiliary diesel engines can be automatically shut down as a result of _____.

A. low lube oil temperature B. low lube oil pressure

C. high exhaust temperature D. high cooling water pressure

14. The longer the ignition delay period resulting from improper use of low cetane fuel, the _____.

A. less fuel will enter the cylinder B. higher the cylinder combustion temperature

C. more complete the fuel combustion D. more rapid the rise in combustion pressure

15. A substantial increase in crankcase pressure could be an indication of _____.

A. excessive lube oil pressure B. the proper seating of new rings

C. a worn cylinder liner D. a malfunctioning cylinder relief valve

16. Persistent knocking in one cylinder of a diesel engine could be caused by_____.

A. a low load on that cylinder B. sluggish piston ring action

C. excessive piston crown cooling D. excessive clearance of piston pin

17. Which of the following problems will occur if the needle valve in a fuel injection nozzle sticks in the open position?

A. Fuel injection timing will change B. Nozzle operation will be unaffected

C. Fuel will leak into the drain line D. Fuel will not be delivered

18. High cylinder firing pressure, accompanied by low exhaust temperature, can result from ___.

A. improper fuel rack positing B. lengthy exhaust valve duration

C. extend operation at light load D. excessively early injection timing

19. The most common contamination of governor hydraulic fluid is _____.

A. moisture B. dirt C. acid D. air

20. The main propulsion diesel engine jacket water temperature rises above normal, with the raw water sea suction and the expansion tank water level being normal. Which of the following problems is most likely the cause?

A. Faulty thermostatic bypass valve

B. Eroded zinc pencils in the heat exchanger

C. Steam formation in the expansion tank

D. Excessive leakage from jacket water pump seal

21. Once a trunking fire is detected the engine should be slowed down. On no account should_____.

A. the crankcase be opened up B. the trunking be opened up

C. the engine be slowed down D. the trunking not be opened up

22. If the engine does start on air, but combustion does not immediately begin, the cause may be _____.

A. failure of the fuel pumps B. starting air pressure too low

C. stop valve in air line closed D. the turning gear still engaged

23. If a diesel engine were running at 20% overload with a smoky exhaust, you should_____.

A. stop the engine immediately to prevent damage

B. increase lube oil pressure

C. slow the engine allowing it to gradually cool

D. decrease the cooling water temperature to the water jacket

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24. In reducing engine speed to an efficient propeller speed by the use of reduction gears, _____.

A. speed and torque are both reduced

B. speed is reduced and torque remains unchanged

C. speed is reduced and torque is increased

D. speed is sometimes unchanged while torque is increased

25. Oil pressure in the lubrication system is than the static sea water head to ensure that sea water the stern-tube.

A. lower than / can lubricate B. lower than / can cool

C. higher than / can enter D. higher than / cannot enter

26. The propeller is pushed on to the tubeshaft taper and made tight by _____.

A. a mechanical seal B. keyway and key C. a nut D. shrinkage

27. Cold weather starting of a diesel engine is more difficult than warm weather starting due to .

A. use of low viscosity oil in cold weather

B. increased moisture content of inlet air in cold weather

C. increased drag of pistons and bearings due to increased oil viscosity

D. higher compression pressures reached due to smaller clearances existing in the engine during cold weather

28. In the navigation____ cause the shafting over load most easily.

A. stopping the main engine suddenly

B. changing the main engine running direction suddenly

C. the sailing from the shallow water area to the deep water area

D. the ship's trim too much

29. The bearing of tailshaft sealing equipment which adopts the oil nature circulation is hot, the reason is .

A. the rotate speed fluctuation B. the ventilation tube clogged

C. the main engine accelerate so fast D. stormy waves

30. The heat identified by only a change in temperature is known as _____.

A. sensible heat B. latent heat C. total heat D. residual heat

31. Excessive oil foaming in the crankcase of a refrigeration compressor is most likely to occur when the compressor .

A. has run continuously for a long period B. suction pressure is below normal

C. oil level is below normal D. starts after a long idle period

32. If an expansion valve is adjusted for too low a superheat value .

A. the efficiency of the unit will be increased

B. too much liquid will be passed back to the compressor

C. the box temperature will increase causing an expansion of the volume of air

D. the refrigeration effect will increase contributing to uncontrolled box temperatures

33. A cracked diaphragm in a thermostatic expansion valve will cause the valve to _____.

A. return to a neutral position B. flood the evaporator C. open D. close

34. If a refrigeration compressor is short cycling on high head pressure, you should .

A. purge the condenser if the waterside is dirty

B. check for proper water flow through the condenser

C. increase the high pressure cutout setting

D. reduce the cooling water flow

35. A refrigeration system is equipped with a reciprocating compressor and a water cooled condensing unit. If the system is overcharged, the resulting high head pressure will be caused by .

A. the expansion valve overfeeding the evaporator

B. a leaking compressor suction valve

C. an incorrectly adjusted high pressure cutout

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D. refrigerant flooding the condenser

36. A centrifugal fuel oil purifier should be shut down if _____.

A. more sealing water is needed

B. the cover clamp needs tightening

C. the purifier has a bad vibration when started

D. water is discharged from the overflow line

37. One of the reasons that cause oil flowed from sludge outlet of a self-cleaning separator is ___.

A. seal water supply be cut off B. make-up water supply be cut off

C. oil outlet valve closed or not open sufficiently D. the flow rate of oily water is too much

38. Among the basic categories of equipment, which of the following are used to allow the hydraulic energy to be controlled?

A. hydraulic pumps B. valves C. hydraulic cylinders D. hydraulic motors

39. In a radial piston pump, reversal and control of fluid flow are accomplished by moving the _____.

A. central valve B. radial plunger C. floating ring D. cylinder body

40. As the designated rudder angle is being achieved, as a result of the original command input, the steering gear follow-up mechanism is .

A. in motion, providing a null input

B. not in motion, thus providing a null input

C. in motion, providing an input to place the main pump on maximum stroke

D. in motion, providing an input to place the main pump at null stroke

41. The purging of air from an elector-hydraulic steering gear unit is necessary when .

A. changing over to hand pump operation

B. engaging the trick wheel

C. the system has been filled with new oil

D. the rudder angle indicator does not match the helm position

42. Hydraulic machinery failures are commonly caused by contamination of the hydraulic fluid and _____.

A. fluid friction B. fluid turbulent

C. component misalignment D. pressure surges

43. Flexible hose under pressure in a hydraulic system will _____.

A. tend to twist about its long axis B. expand in length and in diameter

C. contract in length and expand in diameter D. flex at right angles to the applied pressure

44. Current changing in direction and rising and falling in value is _____.

A. A.C. B. D.C. C. generator D. fresh water generator

45. The most common type of AC service generator found aboard ship is the stationary _____.

A. electromagnetic field, revolving armature type

B. electromagnetic field, oscillatory armature type

C. armature, oscillatory electromagnet field type

D. armature, rotating electromagnetic field type

46. While paralleling two AC generators using synchronizing lamps only, both lamps will go dark when the generators are _____.

A. running at the same speed B. grounded

C. of the same polarity D. in phase

47. To increase the frequency of an operating AC generator, you should _____.

A. increase the field excitation B. decrease the field excitation

C. increase the number of magnetic poles D. increase the speed of the prime mover

48. The first requirement for logical troubleshooting of any system is the ability to .

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A. collect all available data on a casualty B. recognize normal operation
C. identify the probable cause of a symptom D. isolate the faulty component

49. The main generators are connected to_____.
A. distribution boards B. section boards
C. emergency switch boards D. main switch boards

50. The emergency generator or emergency battery is connected to_____ on most large ships.
A. distribution boards B. section boards
C. emergency switch boards D. main switch boards

51. 'Offset' is an inherent characteristic of which of the follow types of control modes?
A. Two position B. Proportional C. Reset D. Rate

52. A manometer is used to measure _____.
A. pressure B. temperature C. volume D. specific gravity

53. Under which of the listed conditions can the engine room retake the throttle control from the bridge?
A. Any time it is deemed necessary.
B. Only with the master's permission.
C. After a 10 minute delay to the input command.
D. Only after the throttle has been placed in stop.

54. With UMS, when the engine room is unwatched _____ will control the main engine.
A. the bridge officer on watch B. the chief engineer
C. the duty engineer D. the duty motorman

55. About engine stand by, which of the following is false?
A. Preparation for stand-by should be organized by engine room department.
B. Before engine trails, duty engineer should first get agreement from bridge.
C. As to engine trials of the twin diesels and two propellers ship, the two diesels should use "slow ahead" at the same time.
D. After engine trials, the handle of the engine telegraph should be put in the "stop" position.

56. Bridge orders must be _____ and a record of any required changes in speed and direction should be kept.
A. slowly carried away B. carried out with a period of delay
C. promptly carried out D. paid by the captain

57. The fuel booster pump and steam to fuel heater, together with fuel pipe heater tracer line should be shut off as soon as the '____' order is acknowledged.
A. finished with engines B. stop C. stand by D. full ahead

58. Which of the actions listed and instituted on your part will have the greatest lasting effect on the crew with respect to safety?
A. Posting posters illustrating practices
B. Showing video tapes of actual accidents
C. Incorporating safety practices in daily routine
D. Publishing comprehensive safety rules

59. Burning diesel oil should be treated as which class of fire?
A. Class 'A' B. Class 'B' C. Class 'C' D. Class 'D'

60. Radiation can spread a fire by _____.
A. transmitting the heat of a fire through the ship's metal
B. burning liquids flowing into another space
C. heated gases flowing through ventilation systems
D. the transfer of heat across an unobstructed space

61. Which of the following statements is true concerning carbon dioxide when used as a fire extinguishing agent?
A. Carbon dioxide is corrosive when exposed to fire.

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B. Carbon dioxide should be applied slowly to a large engine room fire.

C. Its total cooling effect is far greater than water.

D. Its smothering effect is excellent for class B fires.

62. Which of the following actions should be taken by the engineer on watch when the general alarm is sounded continuously?

A. The engine room ventilation should be started. B. The main engines should be secured.

C. The fire pump should be started. D. The fixed CO2 system should be activated.

63. When administering artificial respiration to an adult, the breathing cycle should be repeated about .

A. 12 to 15 times per minute B. 45 to 60 times per minute

C. 30 to 45 times per minute D. as fast as possible

64. Any carbon built up on surfaces must be washed away by _____ additives and held in suspension by a _____ additive.

A. dispersant / detergent B. detergent / dispersant

C. dispersant / dispersant D. detergent / detergent

65. The reason that the cooling water of the diesel engine should be treated is that ____.

A. cooling water is alkalescence B. cooling water is acidity

C. cooling water contains salinity D. cooling water contains impurity

66. After receiving the stores, you should sign on the ____.

A. engine logbook B. delivery docket C. store list D. maintenance book

67. The tool is used in precision work to smooth or enlarge a slightly undersized hole.

A. round out B. round file C. reamer D. hole driller

68. When a vessel is in dry-dock, the vessel's engineers should _____.

A. examine the condition of the propeller B. chip and paint all hull protection zincs

C. install new docking plugs in all cofferdams D. inspect the hull for hogging or sagging

69. During the M.E. mooring trial, the starting trial is carried under____.

A. cold condition B. stillness condition

C. certain air pressure D. the adminstrator's supervision

70. The additional mark _____ in the Classification Certificate for Machinery represents that personnel are watching at engine assembly control station and monitoring all machinery and electronic devices.

A. BRC B. MCC C. AUT-0 D. AUT-1

71. Each completed page of the Oil Record Book must be signed by the _____.

A. engineer on watch B. Chief Engineer C. Chief Mate D. Master

72. The Port Authorities, in accordance with the IMO resolutions have been carrying out _____ to enhance safety of ships.

A. CPP B. FPP C. PSC D. FSC

73. The fire drill must, as far as practicable, be conducted if _____.

A. there is a minor emergency B. there is an actual emergency

C. there were a minor emergency D. there were an actual emergency

74. When deciding the composition of the engineering watch, which may include appropriately, many factors shall be taken into account.

A. satisfied engineers B. qualified ratings

C. satisfied chief engineer D. qualified chief engineer

75. In the event of minor emergencies when the machinery spaces unattended ____ will be informed of malfunction in the machinery by his cabin monitor.

A. the chief engineer B. the engineer on cabin watch

C. the bridge officer on watch D. the master

76. When the order given by bridge may have bad results, the duty engineer should .

A. inform the captain for a further consideration

B. inform the captain, and not perform it

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C. stop the M/E immediately, and then inform the chief engineer

D. stop the M/E immediately, and then inform the captain

77. The Pollution Prevention Regulations require that all oil spills in United States water be reported immediately to the _____.

A. local port authority B. Corps of Engineers C. U.S. Coast Guard D. state pollution board

78. A vessel sailing through the specific special areas may discharge or dispose of _____.

A. incinerated ash at anytime

B. fairly dense material that will sink, i.e. metal cans or glass bottles at anytime

C. victual waste when at least 12 nautical miles from shore

D. absolutely no garbage at anytime

79. According to the ship emergency plan, when average accident happened and the captain made the decision to withdraw from the engine room, before leaving the engine room, the wrong operation is that ____.

A. the chief engineer leaves the engineer room with the engine room log book at first

B. releasing compressed air in the air receiver and closing the watertight door

C. stopping all the running machineries and electric devices

D. closing the quick-closing valves of all oil tanks

80. The SMS should provide for specific measures aimed at promoting the _____ of equipment or systems the sudden operational failure of which may result in hazardous situations.

A. visibility B. ability C. reliability D. capability

81. _____ means the level for which minimum appropriate protective security measures shall be maintained at all times.

A. Security level 1 B. Security level 2 C. Security level 3 D. Lowest safety level

82. The installation and provision of fire fighting equipment is mainly subject to .

A. ISM Code B. ISPS Code C. IBC Code D. FSS Code

二、关联题（关联题题干下有 4 个小题，每小题 4 个选项）

第一组：

The governor drive is placed on the stern end of the engine and consists of a cylindrical gear wheel which is driven by the gear wheel on the camshaft, plus a set of conical gears. The function of the governor is to control the effective stroke of the fuel pumps, so that the rev/min of the crankshaft is maintained constant within certain limits, independent of the load. The action of the governor is transferred through arms and draw rods to a longitudinal regulating shaft on which a 2-part rain is provided for each fuel pump. The 2-part arm comprises all arm holder and a spring lever which are connected by a spring, thereby enabling the governor to control the pumps even if one of the pump pistons seizes. The movement is transferred from the spring lever to the toothed rack of the pump through a linkage. The regulating shaft is also provided with a stop arm which can be moved by the piston rod in a stop cylinder that is activated when the engine's overspeed trip comes into operation. The piston rod in the stop cylinder influences the stop arm, whereby the regulating shaft is turned and the fuel pumps are set in the 'Stop' position, thus stopping the engine. The Woodward governor tries to maintain the regulating shaft in the 'Running' position, but between the governor and the regulating shaft there is a flexible draw rod that can be compressed and rims allows the regulating shaft to be moved into the 'Stop' position. If a cylinder is to be set out of action, e.g. when measuring the compression pressure, the spring lever and thereby the toothed rack of the relevant fuel pump is moved to the zero position.

83. This passage is mainly about .

A. Working of the governor B. the camshaft

C. fuel index regulating of the engine D. the fuel pump

84. The governor . ①is driven directly by the crankshaft ②is driven with chains by the camshaft ③is in the middle part

A. ① B.②

C. ③ D. None of ①②③ is true.

85. If a fuel pump piston seizes .

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A. the stop cylinder will be activated B. the governor will be damaged

C. the relevant spring will be compressed D. the flexible joint will be compressed

86. When measuring the compression pressure in the cylinder . ①the engine should be stopped ②the fuel pump should be stopped ③the toothed rack of the relevant fuel pump should be moved to zero position

A. ① B. ②

C. ③ D. None of ①②③ is true.

第二组

Despite the best efforts to precisely align rotating machinery shafts, dynamic movement (commonly believed to be due to the thermal growth of the machine casings) has resulted in machines operating at less than optimum alignment conditions. This vexing problem has plagued machine reliability professionals for decades. Shaft alignment is the positioning of the rotational centers of two or more shafts such that they are co-linear when the machines are under normal operating conditions. Proper shaft alignment is not dictated by the total indicator reading (TLR) of the coupling hubs or the shafts, but rather by the proper centers of rotation of the shaft supporting members (the machine bearings).There are two components of misalignment: angular and offset. Offset misalignment, sometimes referred to as parallel misalignment, is the distance between the shaft centers of rotation measured at the plane of power transmission. This is typically measured at the coupling center. The units for this measurement are mils (where 1 mil = 0.001 in.). Angular misalignment, sometimes referred to as “gap” or “face,” is the difference in the slope of one shall, usually the moveable machine, as compared to the slope of the shaft of the other machine, usually the stationary machine. The units for this measurement are comparable to the measurement of the slope of a roof (i.e., rise/run). In this case the rise is measured in mils and the run (distance along the shaft) is measured in inches. The units for angular misalignment are mils/1 in. As stated, there are two separate alignment conditions that require correction. There are also two planes of potential misalignment? The horizontal plane (side to side) mid the vertical plane (up and down). Each alignment plane has offset and angular components, so there are actually four alignment parameters to be measured and corrected. They are horizontal angularity (HA), horizontal offset (ITO), vertical angularity (VA), and vertical offset (VO).

87. What is the passage talking about?

A. Dynamic movement B. Shaft alignment

C. Angular misalignment D. Offset misalignment

88. What is the meaning of the underlined term “co-linear”?

A. coaxial B. in-line C. non-linear D. misalignment

89. Proper shaft alignment is dictated by .

A. the TIR of the coupling hubs or the shafts

B. homocentricity of the shaft supporting bearings

C. offset misalignment

D. angular misalignment

90. How many alignment parameters are there to be measured and corrected?

A. 1 B.2 C. 3 D. 4

第三组：

At appropriate intervals inspection should be made of the main propulsion plant, auxiliary machinery and steering gear spaces. Any routine adjustments may then be made and malfunctions or breakdowns can be noted, reported and corrected. During these tours of inspection bilge level should be noted, piping and systems observed for leaks, and local indication instruments also be observed,

Bridge orders must be promptly carried out and a record of any required changes in speed and direction should be kept. When under standby or maneuvering conditions with the machinery being manually operated the control unit or console should be continuously manned.

Certain watchkeeping duties will be necessary for the continuous operation of equipment or plant-the transferring of fuel for instance. In addition to these regular tasks other repair or maintenance tasks may be required of the watchkeeping personnel. However no tasks should be undertaken which will interfere with the supervisory duties relating to the main machinery and associated equipment.

During the watch a log or record will be taken of the various parameters of main and auxiliary equipment. Fuel consumption figures are used to determine the efficiency of operation, in addition to providing a check on the available bunker quantities. Lubrication oil tank levels to some extent indicates engine oil consumption. If the sump level were to rise this would indicate water leakage into the oil and an investigation into the cause must be made. The engine exhaust temperature reading should all be about the same to indicate all equal power production from each cylinder. The various temperature and pressure values for the cooling water and lubrication oil should be at, or near to, the manufacturer's designed values for the particular speed or fuel lever settings.

91. The first paragraph mainly about . ①what should be done during the watch ②what should be done during tours of inspection ③what the duty personnel should do when they begin their watch

A. ① B. ② C. ③ D.①②③

92. The watchkeeping personnel . ①should note bilge level ②should observe piping for leaks ③should undertake required tasks not affecting their supervisory duties

A. ① B. ② C. ③ D.①②③

93. Fuel consumption figures are used to .①determine the efficiency of operation ②provide a check on the available bunker quantities

A. ① B. ②

C. Both ① and ② are true D. Neither ① nor ② is true

94. The fourth paragraph is mainly about . ①why certain parameters should be recorded ②where to get these readings ③the purpose to log the sump level

A. ① B. ② C. ③ D.①②③

中华人民共和国海事局

2009 年第 5 期海船船员适任证书全国统考试题(总第 48 期)

科目：轮机英语 试卷代号：803

适用对象：无限、近洋航区 3000KW 及以上船舶大管轮

（本试卷卷面总分 100 分，及格分为 70 分，考试时间为 100 分钟）

答题说明：请选择一个最合适的答案，并将该答案按答题卡要求，在其相应位置上用 2B 铅笔涂黑。第 1 题至 82 题，每题 1 分，第 83 题至 94 题，每题 1.5 分。

十一、 单项选择题：

1. The reason why more and more of the large merchant vessels are being powered by medium-speed diesel engines is .

A. they operate between 150 and 450 rpm

B. they are connected to the propeller by gearing

C. their smaller size and weight

D. they can be connected directly to the propeller without gearing

2. The closing of the exhaust valves used on a modern, large, low-speed, main propulsion diesel engine may be directly provided by .

A. large conical springs B. compressed air pressure

C. hydraulic pressure D. exhaust gas pressure

3. One of the factors limiting the amount of toad which can be put on a modem marine diesel engine is the .

A. governor sensitivity B. exhaust temperature

C. fuel injection pressure D. speed of the cam shaft

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4. The desirable properties or a marine fuel oil should include .

A. high flash point and high viscosity B. low flash point and high viscosity

C. low heating value and high sulphur content D. high heating value and low sulphur content

5. As the plunger moves upwards in the barrel, injection will commence once the plunger bas the spill ports and the pressure builds up.

A. opened up B. closed off C. lined up D. taken off

6. In an auxiliary diesel engine bypass type lubricating oil system, the main lube oil pump forces .

A. all of the oil used by the engine through a filter

B. some of the oil used by the engine through a filter

C. some of the oil used by the engine through a centrifuge

D. all of the oil used by the engine through a centrifuge

7. Because the circulating water is in a closed loop, is installed to cater for expansion and contraction of the water at different conditions of operation.

A. an expansion joint B. a drain tank C. a head tank D. a contraction tank

8. The high air velocity leaving the compressor of an exhaust gas turbocharger is converted to pressure in the .

A. inlet nozzle ring B. turbine wheel blade C. diffuser passages D. inlet volute

9. is usually driven by the engine camshaft and supplies pilot air to the cylinder air start valve.

A. An air receiver B. An operating valve C. An automatic valve D. An air distributor

10. Diesel engines driving alternators operating in parallel must maintain a set frequency regardless of load changes. The governor characteristic used to accomplish this is known as .

A. actuation B. sensitivity C. compensation D. promptness

11. By comparing the exhaust gas temperature of each cylinder, the operator can determine if the load is balanced throughout the engine. The device most commonly used is a .

A. tachometer B. pyrometer C. dynamometer D. calorimeter

12. When the ship is going to enter into the harbor, ____.

A. change from heavy fuel oil to diesel oil for main engine

B. pumping out bilge water

C. change sea chest from high level one to lower level one

D. test emergency generator

13. If the jacket water temperature rises rapidly above normal in a diesel engine, you should first .

A. place standby cooler in operation B. reduce engine toad

C. check thermostatic valve D. clean sea water strainer

14. Air cocks, usually positioned at the in a circulating system, is used to get rid of the air in the system.

A. bending joint B. expansion tank C. weld D. the highest point

15. Which of the following conditions could contribute to the cracking of a diesel engine cylinder head?

A. Leaking seal ring

B. Insufficient heat transfer from the exhaust valves

C. Blocked cooling water passages to the head

D. Excessive scavenging air provided to the engine

16. of an engine crankshaft can be detected by measuring deflections of' crank webs for each unit of the engine.

A. Misalignment B. Length C. Strength D. Stresses

17. can be a direct cause of faulty operation of diesel engine fuel injection nozzles.

A. Excessive fuel nozzle holder cooling B. Sediment in the fuel supply

C. Distortion of the fuel spray pattern D. Improper atomization of the fuel

18. When fuel is injected late into a diesel engine cylinder .

A. the exhaust will be clear B. fuel consumption will be low

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C. all the fuel will be burned at top dead center D. fuel consumption will be high

19. A large change in ambient temperature, or using an oil of a viscosity different than the one recommended by the manufacturer in a mechanical hydraulic governor, will result m the need to adjust the .

A. pilot valve opening B. compensating needle valve

C. compensating spring tension D. accumulator spring tension

20. Which of the following factors tends to increase scale formation on the saltwater side of a heat exchanger used in a diesel engine cooling water system?

A. Baffle plates that have been bent during prior removal.

B. Leaks m the cooler tube nest.

C. Operating the engine while maintaining a high sea water outlet temperature.

D. A punctured sea water strainer supplying cooling water to the heat exchanger.

21. If the scavenge fire is of a more major nature, if there is a risk of the fire extending or if the scavenge trunk is adjacent to the crankcase with risk of a hot spot developing it sometimes becomes necessary to the engine.

A. stop B. start C. speed up D. slow down

22. In an operating diesel engine, which of the following conditions is an indication of a leaking air starting valve?

A. Noise coming from that air starting valve.

B. Continuous operation of the starting air compressor.

C. Zero air pressure in the air starting system.

D. Overheated starting air pipe to the cylinder head.

23. Engine operating conditions may be indicated by the color of the exhaust smoke. Black smoke could indicate .

A. an insufficient speed droop setting B. an overloaded engine

C. clogged drain holes in the oil control rings D. complete combustion

24. In reducing engine speed to an efficient propeller speed by the use of reduction gears, ..

A. speed and torque are both reduced

B. speed is reduced and torque remains unchanged

C. speed is reduced and torque is increased

D. speed is sometimes unchanged while torque is increased

25. Which of the following statements represents an advantage of an electromagnetic clutch?

A. Large misalignments can be tolerated between the shaft and engine coupling

B. Slip is held to a minimum when reversing shaft rotation

C. Engine torsional vibrations to the driven shaft are eliminated

D. It aids in maintaining power factor

26. _____ of the controllable pitch propeller enables the blades to be moved to change the pitch angle.

A. An external mechanism B. An internal mechanism

C. An interlock device D. A hunting gear system

27. When sailing ill cold zones, should be drained of water.

A. the ventilation pipe B. the water line for fire fighting on the deck

C. the fuel oil line D. the water supplying line in bath room

28. If anything abnormal be found on the load change of main engine when the ship is entering in shallow waterway, before taking measures the engineer on duty should .

A. stop main engine immediately

B. ask the captain and the chief engineer's permission for stopping the engine

C. inquire the bridge for the situation initiatively

D. stop engine and inform bridge

29. Pitted reduction gear teeth having a deep blue color with evidence of overheating have been operated with .

A. excessive speed B. improper warm-up

C. extreme misalignment D. inadequate lubrication

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30. Which of the following modes of heat transfer does NOT require any physical contact between a warmer and a cooler substance?

A. Radiation B. Conduction C. Natural convection D. contact directly

31. To add refrigerant to the low side of an air conditioning system, the refrigerant should be introduced through the .

A. suction service valve as a vapor B. suction service valve as a liquid

C. discharge service valve as a vapor D. charging valve as a liquid

32. If the superheat value of a thermostatic expansion valve is set too low, the _.

A. the suction line will be abnormally cold and liquid may slug back to the compressor

B. the suction line will be hot due to a reduced amount of refrigerant returning to the compressor

C. the temperature of the refrigerant within the condenser will remain the same

D. the temperature of the refrigerant passing through the sub-cooler will decrease

33. Sweating of the refrigeration system compressor crankcase is caused by .

A. too much superheat

B. insufficient superheat

C. suction pressure too low

D. excessive refrigerant returning to the compressor

34. If a refrigeration compressor is short cycling on high head pressure, you should .

A. purge the condenser if the waterside is dirty

B. check for proper water flow through the condenser

C. increase the high pressure cutout setting

D. reduce the cooling water flow

35. Which of the following problems could cause the high pressure cutout switch to shut down the compressor in a refrigeration system?

A. A shortage of liquid refrigerant. B. Excessive frost on the evaporator.

C. Excessive condenser cooling water. D. Insufficient condenser cooling water flow.

36. For a purifier changing to a gravity disc with smaller hole diameter will move the interface towards the .

A. bowl periphery B. bowl center C. upper surface D. lower surface

37. can cause oil flow from water outlet of the oil purifier.

A. Oil inlet valve opening too quickly B. Oil temperature little higher than normal

C. Diameter of gravity disc too small D. Viscosity of oil little lower than normal

38. Check valve isn't used to control .

A. direction of oil flow B. back pressure of return oil

C. bypass of filter D. high pressure overflow

39. Among the basic categories of equipment, which of the following are used to convert the hydraulic energy into linear motion?

A. hydraulic pumps B. valves C. hydraulic cylinders D. hydraulic motors

40. With reference to a two-ram actuating mechanism, which one of the following statement is FALSE?

A. The rams work inside cylinders.

B. The cylinders have glands sealing their open ends.

C. The rams are connected to a cross-head.

D. The cross-head is mounted on the rudder stock.

41. If a heavy sea strikes the rudder, the shock is transmitted through ___ to the rams, this cause a sudden increase in oil pressure in one of the cylinders.

A. the control rod B. the hunting gear C. the floating ring D. the tiller arm

42. The viscosity of' an oil is a measure of its .

A. weight B. internal friction C. demulsibility D.S.A.E. number

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43. One function provided by a hydraulic accumulator is to ___.

A. provide an area where air can separate from the oil

B. provide an area to separate solid contaminants from the oil

C. act as an oil and water separator

D. absorb shocks occurring in the system

44. Which of the following components are used to convert alternating current produced in the generator windings to direct current?

A. Armature and equalizer B. Commutator and brushes

C. Rotor and interpoles D. Field and exciter

45. The frequency of an alternator at a given r/min is determined by the .

A. number of turns of wire in the armature coil B. number of magnetic poles

C. strength of the magnets used D. output voltage

46. The operation of two alternators requires the voltages to be equal and also in phase.

A. paralleling B. series-mounting C. running D. controlling

47. The power factor of an AC generator operating singularly is determined by the .

A. connected load B. prime mover speed

C. field excitation D. generator's rated voltage

48. When you are making a high potential test on a piece of repaired electrical machinery, a rise in leakage current indicates .

A. good insulation B. bad insulation

C. high insulation power factor D. a high slot discharge factor

49. For the power is supplied by main switchboard directly not through sub-board.

A. saving network cost

B. improving the reliability of supplying power to important load

C. preventing sequence reversing

D. increasing the power Factor of important load

50. The emergency generator or emergency battery is connected to on most large ships.

A. distribution boards B. section boards

C. emergency switch boards D. main switch boards

51. Which of the following definitions can be used to define the term 'offset' as a characteristic of controller action?

A. The period of time in which the set point and the control point coincide.

B. The periodic change between the set point and the control point.

C. The variable difference between the set point and the control point.

D. The constant difference between the set point and the control point.

52. A manometer is used to measure .

A. pressure B. temperature C. volume D. specific gravity

53. Which of the listed devices may be used as a digital device?

A. variable resistor B. diode C. strain gauge D. thermistor

54. UMS are mainly unattended overnight and during this time should have control of the main engine.

A. the chief engineer B. the engineer on cabin watch

C. the bridge officer on watch D. the master

55. Before starting the engine, the air bottle should be ____.

A. pumped up B. loaded C. discharged D. closed

56. During UMS rounds, a duty engineer notices that the fuel oil overflow observation glass is full of oil. Should he .

A. Stop all F.O. transfers immediately, and inform the chief engineer.

B. Make a sounding of the F.O. overflow tank and decide if there is enough capacity to leave it until the

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following morning.

C. Call a motorman and have him sound the F.O. overflow tank periodically during the night.

D. start the F.O. purifier

57. When received the order "Finished With Engine", which of the following operations is wrong?

A. stop the L.O pump, S.W pump, jacket water cooling pump immediately

B. stop the F.O booster pump

C. engage the turning gear, turn the main engine

D. open the main engine scavenge air trunk's drain cocks

58. Which of the following is NOT a recommended safe practice?

A. Securing equipment against slipping or drifting.

B. Operating machinery at its recommended speed.

C. Repairing loose handles on tools before using.

D. Using tools for purposes for which they are not designed.

59. A fire involving aluminum powder would be a class .

A. 'A' fire B. 'B' fire C. 'C' fire D. 'D' fire

60. The three basic components of a fire are chain reaction, heat, fuel, and ___.

A. carbon monoxide B. oxygen

C. carbon dioxide D. any gaseous substance

61. Why is it necessary to warn engine room personnel before activating the fixed CO2 system?

A. To make them aware there is a fire.

B. To let them know they should leave the engine room.

C. To prevent possible injury from frostbite.

D. To make them aware that ventilation will automatically stop.

62. While on watch in the engine room, you hear a continuous sounding of the general alarm. Which of the following actions should you take first?

A. Secure the burners then proceed to your assigned boat station.

B. Start the fire pump and establish flow to the fire main.

C. Open the guardian valve and standby to maneuver.

D. Open the master control valves on the fixed CO2 system.

63. Before entering a fuel tank that has been cleaned, it should be checked with an oxygen indicator and a/an .

A. Orsat apparatus B. flame safety lamp

C. Halide torch D. combustible gas indicator

64. Which of the following statements is correct regarding an oil with a high viscosity index?

A. A large change of viscosity occurs with a minor change in temperature.

B. No change in viscosity occurs with any change in temperature.

C. Very little change in viscosity occurs with a significant change in temperature.

D. The viscosity of the oil increases with an increase in temperature.

65. The purpose of treating the cooling water of the diesel engine is to . I. resist the scale formation in the cooling chamber II. lubricate the engine part III. increase thermal capacity IV. resist corrosion

A. I +II B. II + III C. III + IV D. I +IV

66. After receiving the stores, you should sign on the _____.

A. engine logbook B. delivery docket C. store list D. maintenance book

67. , where a ship is refitted for a different use.

A. Voyage repairs B. Routine docking C. Damage repairs D. Conversion

68. During the dock repair, when installing the tail shaft and propeller, should be on the spot for supervising.

A. chief engineer B. engineer

C. captain D. any member of the engine department

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69. does not belong to the mooring trial item.

A. Generator sets running test

B. Shafting intensity test

C. The function test for pumps that serving for M.E.

D. M.E. safety devices test

70. The additional mark in the Classification Certificate for Machinery means propulsion apparatus is remotely controlled on the navigating bridge control station, and engine assembly control station is watched by duty personnel.

A. BRC B. MCC C. AUT-0 D. AUT-1

71. The core item in the Oil Record Book Part I is , and its main content is .

A. Item A, BALLAST OR CLEANING OF FUEL OIL TANKS

B. Item B, DISCHARGE OF DIRTY BALLAST OR CLEANING WATER FROM FUEL OIL TANKS REFERRED TO UNDER SECTION(A)

C. Item C, DISPOSAL OF OIL RESIDUES(SLUDGE)

D. Item H, BUNKERING OF FUEL OIL

72. During the PSC inspection, under the provisions of SOLAS 74, which one be regarded as clear grounds for ships' detainment?

A. failure of proper operation of propulsion B. paint peeling off the uptake

C. no operation procedures for file oil separators D. damaged sanitary pump

73. The Port State Control officer may witness a fire drill carried out by the crew assigned to these duties on the .

A. Navigation Log Book B. Engine Room Log Book

C. Oil Record Book D. Muster List

74. When deciding the composition of the engineering watch, which may include appropriately, many factors shall be taken into account.

A. satisfied engineers B. qualified ratings

C. satisfied chief engineer D. qualified chief' engineer

75. When the machinery spaces are in the periodic unmanned condition, shall be immediately available and on call to attend the machinery space.

A. the chief engineer

B. the designated engineer from shipyard

C. the designated duty officer in charge of the engineering watch

D. the designated surveyor from classification society

76. When anchoring in unsheltered anchorage, chief engineer should consult with captain .

A. if the ship must be stand by B. if take bunkering

C. if keep-watching as in voyage D. if the ship must anchor two anchors

77. The scuppers should be plugged .

A. only if fixed containment is not used B. only if portable containment is not used

C. only if fixed containment drains are open D. whenever the vessel is being bunkered

78. Which statement regarding garbage disposal is correct?

A. Records for ground garbage disposal are not required when disposal into the sea occurs more than 25 miles offshore.

B. Discharging or transfer of garbage while in port to a shore facility must be recorded.

C. Maintaining records for the incineration of garbage aboard ship is not required.

D. The recording of garbage disposal should include the approximate weight.

79. The alarm signal for engine room catching fire is a blast of random bell followed by .

A. two knocks B. three Blocks C. four knocks D. five knocks

80. According to the ISM CODE, the "person" in the phrase 'to designate a person or persons ashore having direct access to

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the highest level of management' refers to __

A. the manager of the shipping company B. the master of the ship

C. the designated person on board ship D. the designated person ashore

81. The ship security officer shall have knowledge and have received training, taking into account the guidance given in Part B of .

A. the ISM Code B. the ISPS Code C. the IBC Code D. the IGC Code

82. In order to limit the introduction of alien species by ship, was adopted on 13 Feb, 2004 at the IMO.

A. Revised MARPOL annex I

B. Revised MARPOL annex II

C. International convention for the control and management of ships' ballast water and sediments

D. ISPS Code

二、关联题（关联题题干下有 4 个小题，每小题 4 个选项）

第一组： The Wartsila 50DF operates on the lean-bum principle: the mixture of air and gas in the cylinder has more air than is needed for complete combustion. Lean combustion reduces peak temperatures and therefore NOx emissions. Efficiency is increased and higher output is reached while avoiding knocking. Combustion of the lean air-fuel mixture is initiated by injecting a small amount of LFO (pilot fuel) into the cylinder. The pilot fuel is ignited in a conventional diesel process, providing a high-energy ignition source for the main engine. To obtain the best efficiency and lowest emissions, every cylinder is individually controlled to ensure operation at the correct air-fuel ratio and with the correct amount and timing of pilot fuel rejection. Wartsila has developed a special electronic control system to cope with the demanding task of controlling the combustion in each cylinder, and to ensure optimal performance in terms of efficiency and emissions under all conditions by keeping each cylinder within the operating window. Stable and well-controlled combustion also contributes to less mechanical and thermal load on the engine components. Current stringent emission regulations demand the reduction of NOx emissions. In an internal combustion engine this means controlling peak temperature and residence time, which are the main parameters governing NOx formations. In the Wartsila 50DF engine, the air-fuel ratio is very high (typically 2.2). Since the same specific heat quantity released by combustion is used to heat up a larger mass of air, the maximum temperature and consequently NOx formation are lower. The mixture is uniform throughout the cylinder since the fuel and air are premixed before introduction into the cylinders, which helps to avoid local NOx formation points within the cylinder. Benefiting from this unique feature, NOx emissions from the Wartsila 50DF are extremely and comply with the most stringent existing legislation.

83. What is the combustion feature of the Wartsila 50DF?

A. Lean air in the cylinder B. Excessive fuel in the cylinder

C. Excessive air in the cylinder D. Spark ignition

84. For the Wartsila 50DF, the complete combustion compared with the lean-combustion can decrease the following results .①Exhaust temperatures ②NOx emissions ③Propeller efficiency ④Output ⑤Cylinder knocking ⑥Fuel supply

A.①② B. ③⑥ C. ④ D.④⑤

85. Which system should be supplied to obtain the best efficiency and lowest emissions?

A. Lean combustion principle B. Fuel oil system

C. Electrical control system D. Electronic control system

86. What is the most advantage of the lean-combustion different from the routine combustion?

A. Continue running B. Well combustion

C. Higher peak temperature D. Lower holding time of Maximum temperature

第二组：Magnetic pickup (MPU) sensors are devices which can be used in conjunction with electronic control modules for monitoring of parameters such as speed, direction of rotation and a variety of alarm conditions. MPU sensors are available in various sizes and types. Following are some guidelines for their selection on industrial engines. MPUs are located near a flywheel, camshaft or other type of gear with rotation relative to engine speed. The passing of the gear teeth through the

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MPU tip (pole) generates a voltage and frequency. This frequency is converted to a speed reference by a control module. It should be noted here that most MPUs will develop similar signals. However, the magnitude and strength of the signal is dependent on the size of the sensor in relation to the gear teeth, the clearance between the pole piece and the gear teeth, and various other factors. As a general rule of thumb, the following standards should be met:

①Dimension of tooth top surface should be equal to or more than the pole piece diameter.

②Tooth height should be equal to, or more than the space between teeth.

③The space between teeth should be approximately three times the pole piece diameter.

④Air gap (clearance) between tooth and pole piece should be between 0.015" to 0.030". MPUs normally have 3/8", 5/8" threads and 2", 3" and 4" lengths. Determining which size is appropriate depends on the space available for installation, the availability of pre-drilled holes and consideration to those rules mentioned above. In most cases, these will be the only factors affecting the selcetion of a MPU.

87. MPUs can be used to .①sense speed ②supply alarm ③sense direction of rotation.

A.①② B. ②③ C. ①③ D. ①②③

88. Which of the following factors will affect the strength and magnitude of the signal?

A. The number of the gear tooth. B. The clearance between the pole pieces.

C. The size of the sensor. D. The MPUs thread.

89. According to the passage, we can infer that the pole piece diameter must be tooth height.

A. as same as B. much less than C. much more than D. not confirmed

90. Which of the following factors will affect the selection of a MPU? ①the pole piece length ②the availability of pre-drilled holes ③the space available for installation.

A. ①② B. ②③ C. ①③ D. ①②③

第三组：Following a security incident, in which the response measures outlined in the Ship Security Plan (SSP) have been activated, there will be a thorough review of their effectiveness and details will be made available, on request, to persons duly authorized by the Ship's Flag State Administration. The Ship Security Plan is not subject to detailed inspection (other than confirming its existence on the ship) by duly authorized officials of a port State unless there are "clear grounds" to believe that the ship is not in compliance with the requirements of SOLAS or the ISPS Code, and the only means to verify or rectify the non-compliance is to review the relevant sections of the Plan. In such cases, access to the Restricted parts of the Plan relating to the non-compliance is exceptionally allowed, but only with the consent of the Flag State, or the master. If the master, in his professional judgment, believes that such "clear grounds" exist, and allowing access to relevant sections of the Restricted part of the Plan might resolve the situation, such access can be exceptionally granted. However, this should be immediately reported by the ship to the Company Security Officer (CSO). If access to the Restricted part of the Plan is denied by the master, this should be immediately reported by the ship to the Company Security Officer for guidance and reference to the Flag State.

The Confidential part of a SSP cannot be subject to non-flag State inspection unless otherwise agreed by the contracting governments concerned. Any such request or demand by port state officials to view sections of the Confidential part of the Plan will be immediately reported by the ship to the Company Security Officer for guidance and reference to the flag State before any details are revealed to non-flag State officials. The Confidential provisions, which from an integral part of this Plan, are held by the Ship Security Officer (SSO)

91. After a security incident, the revision of the SSP will made by .

A. the CSO

B. the SSO

C. persons duly authorized by the Ship's Flag State Administration

D. information not given

92. Which statement is True?

A. The Port State Control Officer has no right to check a SSP

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B. The Master has the right to refuse the request from a Port State Control Officer to check the confidential part of the SSP on board

C. The Confidential part of a SSP can never be subject to non-flag State

D. Even the flag State has no right to check the SSP thoroughly

93. The Restricted parts of a SSP are kept on board by

A. the CSO B. the SSO C. the Flag State D. the master

94. After the SSP being checked by a duly authorized officials of a port State, whom should be reported to by the ship immediately?

A. Port State B. Flag state C. The CSO D. The Administration

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