

电子电气专业

中华人民共和国海船船员适任考试同步辅导教材

电子电气员英语

主编 刘 蓓



大连海事大学出版社

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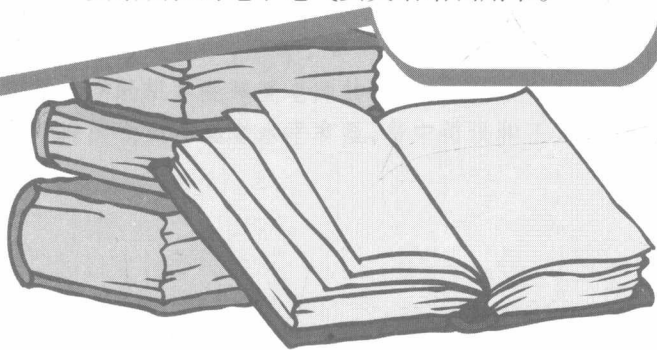
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内 容 提 要

本书为海船船员参加中华人民共和国海事局海船船员适任证书全国统考“电子电气员英语”科目的培训辅导教材,由电子电气员英语教学领域富有经验的英语教师和专业教师共同编写。本书根据《中华人民共和国海船船员适任考试和发证规则》(中华人民共和国交通运输部令2011年第12号),严格按照中华人民共和国海事局制定的《中华人民共和国海船船员适任考试大纲》内容编写,精选习题按照大纲考点归纳汇编,共收集和编写了单项选择题1700余道,关联题49篇200余道。本书满足STCW公约马尼拉修正案要求,适用于船舶电子电气技术专业学生适任证书培训与考试,也可作为电子电气员过渡期适任培训等各类船员培训班的电子电气员英语培训用书。





编者的话



《电子电气员英语》是“中华人民共和国海船船员适任考试同步辅导教材”之一,本书依据STCW公约2010年马尼拉修正案和中华人民共和国海事局2012年7月1日起实施的新《中华人民共和国海船船员适任考试大纲》(以下简称“新大纲”)而编写,适用对象为申请750 kW及以上船舶电子电气员适任证书的学员。书中内容全部覆盖了“新大纲”中对750 kW及以上船舶电子电气员职务“电子电气员”考试所要求掌握的内容,深度和广度也与“新大纲”的要求相适应。本书共分七章,分别为船舶概论、船舶电气、轮机自动控制技术、船舶计算机网络、通信与导航设备、船舶管理和关联题。共收集和编写了单项选择题1700余道,关联题49篇200余道。题型与统考试题完全一致,即均为四选一单选题,习题采用各节连续编号,每节后附有习题参考答案。为便于培训和学员的学习,章节的编排完全遵照“新大纲”的顺序。

本书既可作为海船船员适任证书全国统考培训用辅助教材,也可作为航海技术本科、高职、中职学生学习“电子电气员英语”的参考资料。

本书由青岛远洋船员职业学院刘蓓担任主编,张延涛、高兴斌、林红、江园参编,其中第一章由刘蓓、林红编写,第二章由刘蓓、高兴斌、江园编写,第三章由张延涛、高兴斌编写,第四章至第五章由张延涛、刘蓓编写,第六章至第七章由刘蓓、林红编写。全书由刘蓓统稿。

在本书编写过程中,得到了青岛远洋船员职业学院机电系孙明主任的支持和指导,同时也得到了集美大学轮机学院陈坚老师的帮助,在此一并表示感谢。

由于时间仓促和编者水平有限,书中错误和不当之处在所难免,恳请读者批评指正。

编者
2014年8月



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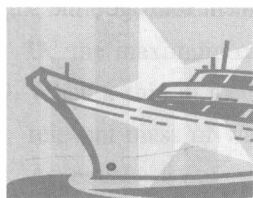
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第一章

船舶概论

第一节 驾驶常识

1. The two basic types of cargo ships are _____.
 - A. container ships and oil tankers
 - B. bulk carriers and liquid carriers
 - C. dry cargo ships and oil tankers
 - D. liquid cargo ships and dry cargo ships
2. The _____ is not a liquid cargo carrier.
 - A. LNG carrier
 - B. LPG carrier
 - C. chemical tanker
 - D. ore carrier
3. A _____ bulk carrier is the largest bulk cargo ship.
 - A. Panamax
 - B. handy-size
 - C. capesize
 - D. Suezmax
4. A ship designed for carrying goods requiring refrigeration is called a _____.
 - A. reefer
 - B. Ro/Ro ship
 - C. container
 - D. tanker
5. A ship designed to carry trucks and cars which are driven on and off the ship on their own wheels is called a _____.
 - A. reefer
 - B. Ro/Ro ship
 - C. container ship
 - D. bulk carrier
6. VLCC stands for _____.
 - A. very large car carrier
 - B. very large cargo carrier
 - C. very large crude carrier
 - D. very large coal carrier
7. Which one is not true?
 - A. Two main areas of skill are involved in the construction of ship.
 - B. There are distinct divisions in responsibilities between naval architects and marine engineers.
 - C. Each ship will assume varying proportions according to its type.
 - D. Ships can be divided into different categories from different perspectives.
8. The structural members of the ship's hull extending in a fore and aft direction are called





- _____.
- A. frames
B. joiners
C. longitudinals
D. knees
9. 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
10. The abbreviation "GM" represents the _____.
- A. height of the metacenter
B. fighting arm
C. righting moment
D. metacentric height
11. 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
12. The stability of a vessel is normally the greatest when all fuel and water tanks are full because the _____.
- A. center of gravity is lowered
B. center of buoyancy is lowered
C. reserve buoyancy is unchanged
D. hull freeboard is increased
13. You may improve a vessel's stability by _____.
- A. keeping the fuel tanks topped off
B. increasing the free surface effect
C. keeping the fuel tanks at least half full
D. keeping at least one fuel tank empty for slops
14. The distance between the bottom of the hull and the waterline is called _____.
- A. tonnage
B. reserve buoyancy
C. draft
D. freeboard
15. For an upright vessel, draft is the vertical distance between the keel and the _____.
- A. waterline
B. freeboard deck
C. Plimsoll mark
D. amidships section
16. In dry docking repair, the hull of a ship will be descaled and repainted thoroughly from the _____ to deck.
- A. keel
B. waterline
C. boardside
D. bridge
17. The space we arrange propelling and other auxiliary machines onboard is called _____.
- A. the engine room
B. the cargo hold
C. the steering gear room
D. the bilge





18. The ship is of 70,000 DWT, the DWT here means _____.
- A. its maximum discharging capacity
B. its maximum weight
C. the maximum discharging capacity deducting ship's own weight
D. the maximum cargo weight
19. When a ship in loaded condition floats at arbitrary water line, its displacement is _____ to the relevant mass of water displaced by the ship.
- A. equal
B. larger
C. smaller
D. equivalent
20. The displacement of a ship is _____ to the total weight, all told, of the relevant loaded ship.
- A. larger
B. equal
C. smaller
D. equivalent
21. The trim of a vessel is the _____.
- A. value of the mean draft
B. degree of list
C. amount of roll
D. difference in fore and aft drafts
22. The difference between the starboard and port drafts caused by a transverse shift in weight is _____.
- A. list
B. heel
C. trim
D. flotation
23. If fuel is burned from only the starboard tanks, the ship will _____.
- A. go down by the head
B. list to starboard
C. trim by the stern
D. list to port
24. 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
25. 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
26. We have stayed at Shanghai port for a long time. The fouling on the ship's hull greatly increased her _____.
- A. power
B. speed
C. resistance
D. thrust force
27. Which of the following equipment is not arranged on the bridge?
- A. PPI.
B. ARPA.
C. ECDIS.
D. Rudder post.
28. Which of the following equipment is not located in the wheel house?
- A. The steering stand.
B. The engine telegraph.
C. The main engine tachometer.
D. The emergency generator.





29. Which of the following devices is not used when the officer controls the ship?
 A. The main engine tachometer. B. The rudder angle indicator.
 C. The compass repeater. D. The fuel level gauge.
30. ECDIS means _____.
 A. Electronic Chart Display and Information System
 B. Electric CD Information Scheme
 C. End Chart Digital Information Scheme
 D. Electrical Chart Display Information System
31. ARPA (fitted on the bridge) stands for _____.
 A. Audio Radio Plotting Aids B. Automatic Radar Plotting Aids
 C. Advanced Research Projects Agency Network D. Advanced Research Projects Agency
32. Which of the following is not one function of the bridge group switch board?
 A. To control and monitor the navigation and signal lights.
 B. To remote start and stop the motors of steering gear.
 C. To give ship general alarm.
 D. To start generator diesels.

参考答案

1. D 2. D 3. C 4. A 5. B 6. C 7. B 8. C 9. D 10. D
 11. C 12. A 13. A 14. C 15. A 16. A 17. A 18. C 19. A 20. B
 21. D 22. A 23. D 24. B 25. B 26. C 27. D 28. D 29. D 30. A
 31. B 32. D

第二节 轮机常识

1. The diesel engine is a type of _____.
 A. turbine engine B. gas turbine
 C. steam engine D. internal combustion engine
2. _____ 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
3. Diesel engines instead of steam engines used as main engine on board ships is mainly because _____.
 A. they have a high mechanical efficiency B. they have a high thermal efficiency
 C. they are more reliable D. they need less space
4. _____, so they are widely used on board ship nowadays.
 A. Diesel engines has more advantages in comparison with gasoline engines





- B. The diesel engine has more advantages in comparison to the gasoline engine
C. Gasoline engines have more advantages in comparison with diesel engines
D. The gasoline engine has more advantages in comparison to the diesel engine
5. Propulsion of the vast majority of contemporary merchant ships (especially containerhips and VLCCs) utilizes _____ as prime mover.
A. gas turbine
B. diesel engine
C. steam engine
D. gasoline engine
6. The abbreviation "M/E" is used to represent the _____.
A. measure equipment
B. main electrical
C. my engine
D. main engine
7. We call a ship equipped with a diesel engine as main engine _____.
A. a tug boat
B. a salvage ship
C. an oil tanker
D. a motor vessel
8. The slow speed main propulsion diesel operates on two-stroke cycle. At this low speed the engine requires no reduction gearbox between it and _____.
A. thrust blocks
B. propeller
C. flying wheel
D. rudder
9. The diesel works as the prime mover of a modern large vessel (such as the VLCC) is usually of _____ type.
A. two-stroke middle speed
B. two-stroke low speed
C. four-stroke high speed
D. four-stroke low speed
10. The majority of medium speed and high speed marine diesel engines for main or auxiliary drive operate on the _____ cycle.
A. two-stroke
B. four-stroke
C. long-stroke
D. short-stroke
11. Owing to its _____, the low speed cross-head diesel engine is widely used on board ship as a main engine.
A. smaller size and simple construction
B. long life, lower cost and higher reliability
C. easier operation and management
D. simple construction and easier management
12. Typical marine propulsion plants include _____ directly coupled to the vessel's single large-diameter, fixed-pitch propeller.
A. a single, long-stroke, slow-speed, turbocharged, two-stroke diesel engine
B. a single, long-stroke, medium-speed, turbocharged, four-stroke diesel engine
C. two medium-speed, turbocharged, four-stroke diesel engine
D. a variable-speed AC generator
13. The vessel is driven by an FPP, so its main engine must _____.
A. run at a fixed speed
B. run at a controllable speed and be reversible
C. run continuously
D. run at a higher speed





14. The marine diesel engine is a type of diesel engine used on ships. The _____ of its operation is not very difficult to understand.
 - A. principle
 - B. principal
 - C. cause
 - D. case
15. _____ is a source of power by which the diesel engine may operate.
 - A. Water energy
 - B. Electrical energy
 - C. Chemical energy
 - D. Heat energy
16. The thermal energy produced by an internal combustion engine is transformed into _____.
 - A. combustion energy
 - B. internal energy
 - C. external energy
 - D. mechanical energy
17. 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 up and down
 - D. use a continuous combustion process to impart rotary motion to the pistons
18. The heart of the diesel engine is the _____ where the fuel is burnt and the power developed.
 - A. crankcase
 - B. cylinder
 - C. scavenge box
 - D. piston
19. The diesel engine is a type of internal combustion engine which ignites the fuel by injecting it into hot, high pressure air in a(n) _____.
 - A. air bottle
 - B. air compressor
 - C. crank case
 - D. combustion chamber
20. A charge of fresh air is drawn into the engine cylinder and then _____ by the moving piston _____ very high pressure.
 - A. pressed / to
 - B. pressurized / with
 - C. pushed / in
 - D. compressed / to
21. Why is it necessary to compress the air charge in the cylinders of a diesel engine?
 - A. To ignite the fuel.
 - B. To insure pumping losses are held to a minimum.
 - C. To increase fuel consumption.
 - D. To keep exhaust temperature low.
22. The ignition of the fuel in diesel engine is caused by the _____ of compression of the air previously admitted into the cylinders.
 - A. vacuum pressure
 - B. specific gravity
 - C. heat
 - D. viscosity
23. The burning of the fuel adds more heat to the air charge, causing it to expand and force the engine piston to do work on the _____ which in turn drives the ship's propeller.
 - A. crank-pin
 - B. crankshaft



- C. crankcase
D. camshaft
24. The piston moving up and down keeps the crankshaft _____.
- A. to revolve
B. revolved
C. revolving
D. to be revolved
25. When the piston is pushed down, it forces the engine to do work on the crankshaft which in turn drives _____.
- A. the ship's rudder
B. the ship's propeller
C. the turning gear
D. the thrust bearing
26. The linear motion of a diesel engine piston is converted to the rotary motion required to drive gears, propeller shafts, and generators by the _____.
- A. flywheel
B. crankshaft
C. journal bearings
D. camshaft
27. 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
28. The working cycle of a four-stroke diesel engine consists of four events: ①compression; ②expansion; ③exhaust; ④suction. The correct sequence is _____.
- A. ④-②-③-①
B. ④-③-①-②
C. ④-③-②-①
D. ④-①-②-③
29. In the two-stroke engine, it takes _____ to make one power stroke.
- A. one propulsion
B. two propulsions
C. two revolutions
D. one revolution
30. In the four-stroke engine, it takes _____ to make one power stroke.
- A. one propulsion
B. two propulsions
C. two revolutions
D. one revolution
31. For a given size engine, a two-stroke diesel engine will deliver more power than a four-stroke diesel engine because _____.
- A. it has a longer power stroke
B. more air gets into the cylinder each stroke
C. it develops twice as many power strokes at the same speed
D. higher combustion pressure is developed
32. A slow-speed two-stroke diesel is usually arranged to operate continuously on heavy fuel oil and has available a _____ supply for manoeuvring conditions.
- A. lubricating oil
B. diesel oil
C. residual oil
D. hydraulic oil
33. The successful operation of any engine or machine and _____ depend on effective lubrication.
- A. their no trouble period
B. their freely trouble period



- C. its free trouble life D. its trouble-free life
34. The function of lubricating oil is to _____.
- A. reduce friction between moving surfaces
B. provide even distribution of bearing wear
C. reduce the accumulation of harmful detergents
D. maintain a constant oil temperature output at each bearing
35. Heat energy is a source of power, but _____ will cause damage to the engine.
- A. excessive heat B. insufficient heat
C. effective cooling D. high output
36. Cooling enables the engine metals _____ their mechanical properties.
- A. to retain B. to remain
C. to maintenance D. to have
37. If a kind of liquid is used to cool the diesel engine, it is invariably called _____.
- A. lubricant B. coolant
C. combustion product D. second refrigerant
38. Sea water is not directly used as a coolant for engines because of its _____.
- A. low specific heat B. corrosive action
C. high expense D. acid property
39. In motor-ships there are two main cooling circuits, _____.
- A. one salt water, one fresh water B. one salt water, one fuel
C. one fresh water, one fuel D. one steam, one fuel
40. The diesel engine must be started before it can run by itself. For this purpose _____ has to be used.
- ① a starting system;
② the starting air;
③ a starting operation.
- A. ①② B. ②③
C. ①③ D. ①②③
41. Diesel engines are started by supplying _____ into the cylinders in the appropriate sequence for the required direction.
- A. fuel oil B. diesel oil
C. compressed air D. jacket water
42. The starting air system of an engine on board usually has interlocks in order to _____.
- A. ensure a successful shutting down at emergency conditions
B. ensure a successful starting at emergency conditions
C. prevent the engine from starting at some abnormal conditions
D. prevent the engine from starting at emergency conditions
43. Electrically operated safety devices on auxiliary diesel engines function to stop the engine by





- _____.
- A. increasing the volume of intake air B. shutting off the fuel supply
C. increasing the engine back pressure D. over-speeding the engine
44. An overspeed safety device is usually fitted to a generator engine for _____ in the event of overspeed.
- A. cutting power off the engine B. increasing the fuel pump setting
C. braking the crankshaft D. stabilizing the ship speed
45. The governor of a generator engine is to _____.
- A. make the engine stop
B. regulate the timing of camshafts
C. make the RPM stabilize at any required value
D. make the engine run at nearly constant speed
46. A governor automatically controls engine speed by regulating _____.
- A. fuel supply B. firing order
C. engine load D. oil level
47. The governor controlling a diesel engine modulates crankshaft RPM by adjusting the _____.
- A. intake air supply B. turbocharger speed
C. fuel injection pumps D. engine speed droop
48. When the engine speed slows down the governor will _____ the engine fuel pump setting.
- A. increase B. reduce
C. keep D. none of the above
49. The tachogenerator is mainly connected to the _____ of the main engine.
- A. stern shaft B. turning gear
C. crank shaft D. flying wheel
50. To meet the market requirements, a marine diesel engine should not be of _____.
- A. big size B. fuel economy
C. low speed D. high power
51. The _____ on a ship transmits power from the main engine to the propeller.
- A. automatic control system B. speed regulating system
C. transmission system D. chain system
52. The transmission system transmitting power from the engine to the propeller is composed of shafts, bearings, and _____.
- A. propeller B. flying wheel
C. main engine D. crankshaft
53. The function of the thrust block is to transfer the thrust from the propeller to _____.
- A. the tail-shaft B. ahead and astern thrust
C. the main propulsion engine D. the hull of the ship
54. The propeller screws through the water in much the same way _____ a bolt screws through its





nuts.

- A. like
- C. as

- B. alike
- D. seem

55. A propeller, in order to operate efficiently, must rotate at a relatively _____ speed.
- A. high
 - C. fast
 - B. low
 - D. lowly
56. 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
57. The propeller consists of a _____ with several blades of helicoidal form attached to it.
- A. shaft
 - C. wheel
 - B. boss
 - D. lever
58. A controllable pitch propeller on a diesel driven vessel eliminates the need for _____.
- A. friction clutches
 - C. reversing gears
 - B. disconnect clutches
 - D. reduction gears
59. When viewed from the stern, if the propeller revolves in a clockwise direction when going ahead, it is known as _____.
- A. ahead direction
 - C. right-handed
 - B. astern direction
 - D. left-handed
60. In a _____ boiler the hot gases from the furnace pass through the tubes while the water is on the outside.
- A. water-tube
 - C. exhaust gas
 - B. fire-tube
 - D. none of the above
61. In a _____ boiler the water flows through the inside of the tubes while the hot gases pass around the outside.
- A. water-tube
 - C. exhaust gas
 - B. fire-tube
 - D. none of the above
62. W. H. R stands for _____.
- A. Water Head Register
 - C. Waste Heat Recovery
 - B. Water Heater Re-circulating
 - D. Waste Handle Reference
63. In motor ship, _____ is often used to recover some of the heat carried in the exhaust gases from the main engine.
- A. a diesel oil heater
 - C. a fresh water generator
 - B. a waste heat boiler
 - D. all of the above
64. The exhaust boilers are used to recover some of _____ carried in the exhaust gases from the main engine.