

U.S.C.G. Merchant Marine Exam

Master Less than 100 GRT to Master or Mate
Less than 200 GRT Oceans or Near Coastal

Q156 Navigation and Deck General – Safety

(Sample Examination)

Choose the best answer to the following Multiple Choice Questions.

1. On 28 July your 1937 zone time DR position is LAT 26°13.0' N, LONG 78°27.0' E. At that time, you observe Deneb bearing 048.7°pgc. The chronometer reads 02h 37m 42s, and the chronometer error is 00m 15s fast. The variation is 4°W. What is the gyro error?
- (A) 2.4°W
 - (B) 2.8°E
 - (C) 3.6°W
 - (D) 3.6°E

If choice B is selected set score to 1.

2. Which statement about damage control is TRUE?
- (A) A hole in the hull at the waterline is more dangerous than a hole below the inner bottom.
 - (B) The amount of water entering a ship through a hole varies inversely to the area of the hole.
 - (C) Water flowing into a lower compartment on a ship is more dangerous than water on deck or flowing into an upper compartment.
 - (D) Water flowing over the fo'c'sle bulwark is more dangerous than a hole in the hull at the waterline.

If choice A is selected set score to 1.

3. What power source actuates a solenoid valve?
- (A) Mechanical force
 - (B) Hydraulic pressure
 - (C) Electric current
 - (D) Air pressure

If choice C is selected set score to 1.

4. After an engine is started which is the best action(s) to take?
- (A) Increase engine speed to insure adequate flow of oil to all parts of the engine
 - (B) Pay no attention unless there are unusual noises from the engine
 - (C) Check operating pressures and temperatures, and check for leaks
 - (D) Run the engine at idle until the temperature has increased

If choice C is selected set score to 1.

5. According to Coast Guard Regulations (46 CFR), when loading, or discharging oil in bulk at a dock, which of the following signals must be displayed?

- (A) A signal is not required for discharging oil, only gasoline
- (B) A red flag (day), red light (night)
- (C) A yellow flag (day), red light (night)
- (D) A green flag (day), green light (night)

If choice B is selected set score to 1.

6. Which defines the function of a spark arrestor?

- (A) Prevents sparks from getting out of an engine's exhaust system
- (B) It keeps sparks from falling into an open tank
- (C) Grounds static electricity reducing chance of explosion
- (D) Utilized to secure covers on ullage openings

If choice A is selected set score to 1.

7. The signal man assisting the crane operator has his arm extended, his fingers closed, and his thumb pointing downward. This is the signal to _____.

- (A) lower the load
- (B) hoist the load
- (C) lower the boom
- (D) raise the boom

If choice C is selected set score to 1.

8. Pedestal cranes have limit switches to restrict the movement of which function?

- (A) Slew travel limits
- (B) Turntable limits
- (C) Luff travel limits
- (D) All of the above

If choice D is selected set score to 1.

9. How does combustion air enter the cylinder of a two-cycle diesel engine?

- (A) Bleeder valves
- (B) Turbo chargers
- (C) Ports
- (D) Cylinder head valves

If choice C is selected set score to 1.

10. Where is a permanently installed system of gas detection required?

- (A) Cargo pump rooms.
- (B) Cargo compressor rooms.
- (C) Air locks.
- (D) All of the above.

If choice D is selected set score to 1.

11. You receive a distress call from a vessel reporting her position as LAT 30°21'N, LONG 88°34'W. Your position is LAT 24°30'N, LONG 83°00'W. Determine the true course and distance to the distress scene by Mercator sailing.

- (A) 322°T, 455 miles
- (B) 320°T, 460 miles
- (C) 324°T, 460 miles
- (D) 317°T, 470 miles

If choice B is selected set score to 1.

12. When bunkering at a dock which of the following signals must be displayed?

- (A) A red flag by day, a blue light by night
- (B) A yellow flag by day, red light by night
- (C) A green flag by day, green light by night
- (D) A red flag by day, red light by night

If choice D is selected set score to 1.

13. When referring to quantity of barite in a P-tank, ullage is the _____.

- (A) total weight of barite in UPC (ullages per centimeter)
- (B) percentage of barite in the tank
- (C) distance of the barite surface above the tank bottom
- (D) distance of the barite surface below the tank cover

If choice D is selected set score to 1.

14. Who must approve the vessel's trim and stability booklet?

- (A) Society of Naval Architects and Marine Engineers
- (B) National Cargo Bureau
- (C) United States Coast Guard
- (D) International Maritime Organization

If choice C is selected set score to 1.

15. According to U.S. regulations, how many emergency outfits are required to be carried onboard all tankships over 1,000 gross tons?

- (A) Four emergency outfits
- (B) One emergency outfit
- (C) Two emergency outfits
- (D) Three emergency outfits

If choice C is selected set score to 1.

16. Which of the following aspects of a flooded space will most adversely affect transverse stability if it is subject to free communication?

- (A) On the centerline
- (B) Completely flooded
- (C) Off-center
- (D) Open to the sea above and below the waterline

If choice C is selected set score to 1.

17. When using the term "limber system" one is referring to which system?

- (A) A weight reduction system
- (B) A drainage system
- (C) A strengthening system
- (D) A cleaning system

If choice B is selected set score to 1.

18. At 1444 ZT on 28 July, in DR position LAT 40° 56.8' N, LONG 167° 12.4' E, you observe an amplitude of the Moon. The upper limb of the Moon is on the visible horizon and bears 299.3° psc. The variation is 1° E. What is the deviation?

- (A) 3.1°W
- (B) 3.1°E
- (C) 2.1°W
- (D) 2.1°E

If choice A is selected set score to 1.

19. How many ring life buoys should a 700 foot cargo vessel, not subject to SOLAS, navigating the Great Lakes carry?

- (A) 12
- (B) 14
- (C) 18
- (D) 24

If choice B is selected set score to 1.

20. While reading the muster list you see that "3 short blasts on the whistle and three short rings on the general alarm" is the signal for _____.

- (A) dismissal from fire and emergency stations
- (B) fire and emergency
- (C) abandon ship
- (D) man overboard

If choice A is selected set score to 1.

21. A tankship has 40 gallons of 6% foam concentrate aboard. Approximately how much foam solution can be produced from this supply?

- (A) 200 gallons
- (B) 420 gallons
- (C) 667 gallons
- (D) 986 gallons

If choice C is selected set score to 1.

22. Which describes the floors aboard a ship?

- (A) The longitudinal angle bars fastened to a surface for strength
- (B) The longitudinal beams in the extreme bottom of a ship from which the ship's ribs start
- (C) The frames to which the tank top and bottom shell are fastened on a double bottomed ship
- (D) The transverse members of the ships frame which support the decks

If choice C is selected set score to 1.

23. You are fighting a fire in a cargo hold on your vessel. Which action is most important concerning the stability of the vessel?

- (A) Maneuvering the vessel so the fire is on the lee side
- (B) Shutting off electricity to damaged cables
- (C) Removing burned debris from the cargo hold
- (D) Draining fire-fighting water and pumping it overboard

If choice D is selected set score to 1.

24. Most liquefied gas cargoes are flammable, and are carried at or close to their boiling point. What will happen if they are released into the atmosphere?

- (A) allow air to enter the system causing polymerization
- (B) result in sloshing in the tank which could make the ship unstable
- (C) freeze and possibly cause structural damage
- (D) burn, if it's within its flammable range and has an ignition source

If choice D is selected set score to 1.

25. Which term defines cargo that is highly susceptible to damage by tainting from odorous cargo?

- (A) Dry cargo
- (B) Delicate cargo
- (C) Clean cargo
- (D) Immune cargo

If choice B is selected set score to 1.

26. Which statement concerning solid floors is TRUE?

- (A) They are lighter than open floors.
- (B) They are built of structural frames connected by angle struts and stiffeners, with flanged plate brackets at each end.
- (C) They may have lightening, limber, or air holes cut into them.
- (D) They must be watertight.

If choice C is selected set score to 1.

27. Which term is given to the brickwork surrounding the firebox of a boiler?

- (A) The fire plate
- (B) The waterwall
- (C) Refractory
- (D) The screen wall

If choice C is selected set score to 1.

28. Which space(s) on your cargo vessel must have a fire detection system?

- (A) Any compartment adjacent to one containing explosives
- (B) Enclosed spaces which are "specially suitable for vehicles"
- (C) Any compartment containing explosives
- (D) All of the above

If choice D is selected set score to 1.

29. A thirty pound plate would be which thickness?

- (A) 3/4" thick
- (B) 1" thick
- (C) 3/8" thick
- (D) 1/2" thick

If choice A is selected set score to 1.

30. In illustration D015SA below, which item number correctly identifies the hydrostatic release?

- (A) 3
- (B) 6
- (C) 7
- (D) 9

If choice B is selected set score to 1.

31. Which item do you NOT have to provide for the Coast Guard representative at the time of a stability test?

- (A) General arrangement plans of decks, holds and inner bottoms
- (B) Capacity plans showing the vertical and longitudinal centers of gravity of stowage spaces and tanks.
- (C) A stability letter.
- (D) Tank sounding tables and draft mark locations.

If choice C is selected set score to 1.

32. If you are loading fruit in reefer spaces and you notice that the fruit is beginning to mold, which action should you take?

- (A) Write up exceptions on the cargo
- (B) Discharge CO₂ into the compartment after loading
- (C) Carry the cargo at a cooler temperature than originally planned
- (D) Refuse to carry any of the cargo

If choice A is selected set score to 1.

33. Which item is a safety feature provided on all inflatable liferafts?

- (A) Internal releasing hooks
- (B) Built in seats
- (C) Overhead safety straps
- (D) Water stabilizing pockets

If choice D is selected set score to 1.

34. Which is TRUE for the directive force acting on a gyrocompass?

- (A) The force increases as the latitude increases, being maximum at the geographic poles
- (B) The force remains the same at all latitudes
- (C) The force is greatest when a vessel is near the Earth's magnetic equator
- (D) The force increases as the latitude decreases, being maximum at the geographic equator

If choice D is selected set score to 1.

35. How is the number of pounds of carbon dioxide required for each cargo space on a cargo vessel computed?

- (A) The gross volume of the space in cubic feet divided by 30
- (B) One pound of CO₂ per cubic foot of cargo space
- (C) One pound of CO₂ per square foot of deck area
- (D) The gross volume of the space in cubic feet divided by 100

If choice A is selected set score to 1.

36. All lifeboats, rescue boats, and rigid-type liferafts shall be stripped, cleaned, and thoroughly overhauled at which time interval?

- (A) 6 months
- (B) Yearly
- (C) 18 months
- (D) Every two years

If choice B is selected set score to 1.

37. What is the reaction of a gyrocompass to an applied force known as?

- (A) Gravity effect
- (B) Gyroscopic inertia
- (C) Earth rate
- (D) Precession

If choice D is selected set score to 1.

38. In launching a lifeboat, when should the tricing pendants be released?

- (A) Before the boat is lowered from the stowage position
- (B) As soon as the boat-fall blocks clear the davit head
- (C) After the limit switch is activated
- (D) After all people have been embarked

If choice D is selected set score to 1.

39. Cargo vessels being navigated, and fitted with emergency lighting and power systems, shall have their emergency systems tested at which interval?

- (A) Once in every 6 months
- (B) Once in every 12 months
- (C) At least once in each week
- (D) At least once in each month

If choice C is selected set score to 1.

40. Which is TRUE concerning the length of the steering oar in a lifeboat?

- (A) It is longer than the rowing oars
- (B) It is unrelated to the length of the rowing oars
- (C) It is shorter than the rowing oars
- (D) It is the same length as the rowing oars

If choice A is selected set score to 1.

41. The scuppers had been plugged as required at the time a small oil spill occurs on deck from a leaking dresser coupler. After shutting down the transfer, the engine room should first be informed and then which action should be taken?

- (A) Remove the plugs from the scuppers
- (B) Sound the general alarm
- (C) Rig a fire hose to wash down the deck
- (D) Spread an absorbent material, such as sawdust

If choice D is selected set score to 1.

42. Which is the proper term for a band or collar on the top end of a boom to which the topping lift, midships guy, and outboard guys are secured?

- (A) The guy band
- (B) A pad eye collar
- (C) The spider band
- (D) A collar band

If choice C is selected set score to 1.

43. How would the exhaust of a properly operating diesel engine appear?

- (A) Perfectly clear
- (B) Light brown haze
- (C) Light gray haze
- (D) Light blue haze

If choice A is selected set score to 1.

44. The Master of a fishing vessel must ensure that each crew member participates in at least one fire drill during which time frame?

- (A) A day
- (B) Every week
- (C) Once a month
- (D) Once every 3 months

If choice C is selected set score to 1.

45. A liferaft with a capacity of 8 people used in ocean service is required by regulations to carry items?

- (A) 8 liters of fresh water
- (B) 12 units of provisions
- (C) 12 liters of fresh water
- (D) 24 units of provisions

If choice C is selected set score to 1.

46. You must shore up the collision bulkhead due to solid flooding forward. The bulkhead approximates an inverted triangle. Where should the center of pressure of the shores on the bulkhead be located?

- (A) Approximately halfway up the bulkhead
- (B) At the bottom of the bulkhead
- (C) Evenly over the surface of the bulkhead
- (D) Approximately two-thirds of the way up the bulkhead

If choice A is selected set score to 1.

47. With an increase in temperature the volume of flammable and combustible liquids _____.

- (A) contracts
- (B) remains constant if pressure remains constant
- (C) remains constant
- (D) expands

If choice D is selected set score to 1.

48. Which is TRUE of the Great Lakes Edition of the Notice to Mariners?

- (A) It is published monthly by the Army Corps of Engineers
- (B) It is published monthly by the Naval Oceanographic office
- (C) It is published biweekly by the Commandant, U.S. Coast Guard
- (D) It is published weekly by the 9th Coast Guard District

If choice D is selected set score to 1.

49. The two courses of action if the underwater hull is severely damaged are to plug the openings or to take which action?

- (A) Secure power to the compartment
- (B) Establish and maintain flooding boundaries
- (C) Dewater the compartment
- (D) Ballast to maintain even keel

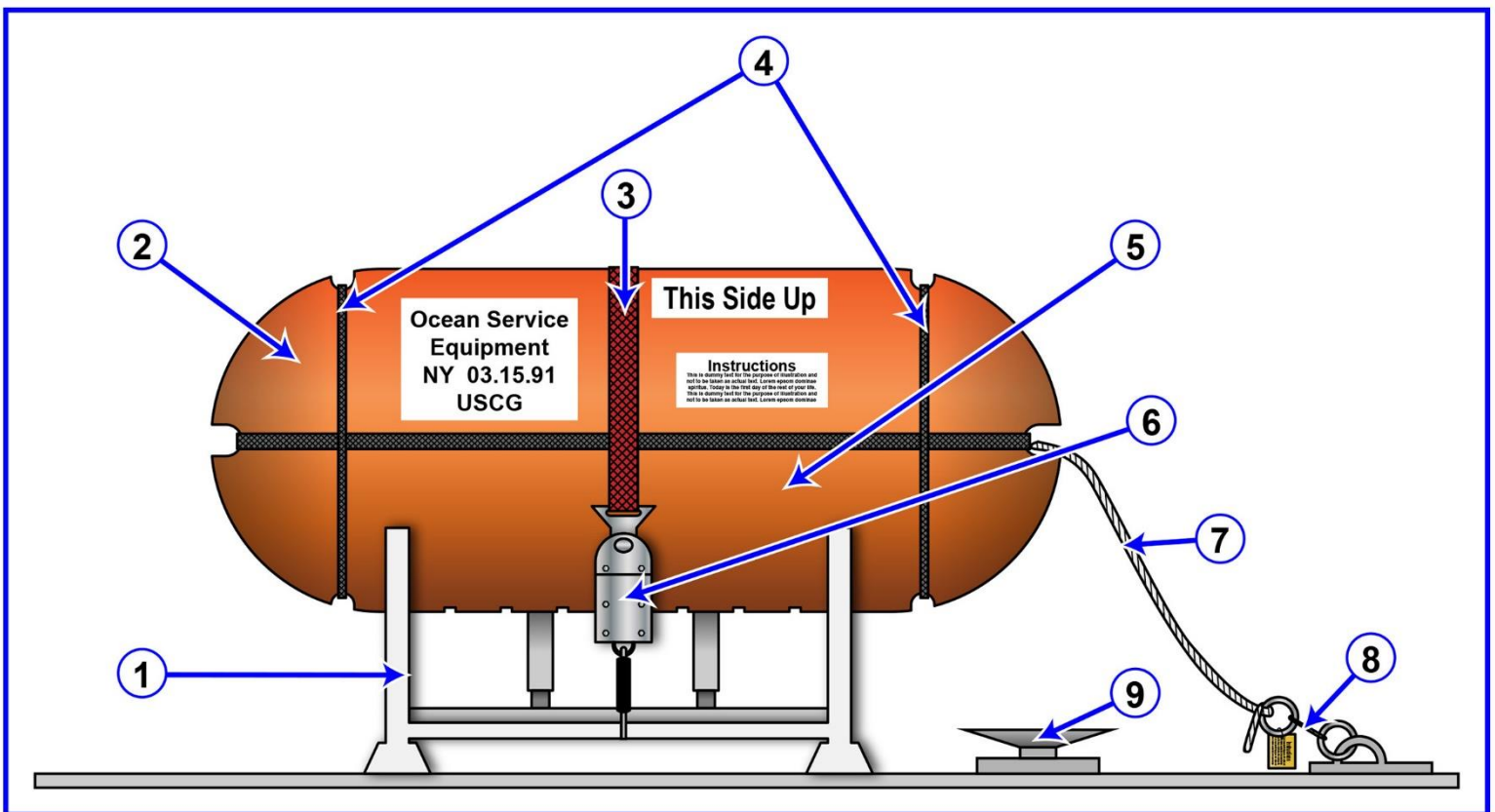
If choice B is selected set score to 1.

50. If you are unable to stop a diesel engine by any other means, which action can you take?

- (A) Pull off the distributor cap
- (B) Secure the jacket water
- (C) Discharge a CO2 extinguisher in the air inlet
- (D) Secure the starting air supply valve

If choice C is selected set score to 1.

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