U.S.C.G. Merchant Marine Exam

Master of Unlimited Tonnage

Q303 Deck Safety

(Sample Examination)
Choose the best answer to the following Multiple Choice questions.

1. Which type of weld is used to attach stiffeners to a plate?
   - (A) Seam welds
   - (B) Butt welds
   - (C) Plate welds
   - (D) Fillet welds

   If choice D is selected set score to 1.

2. Which is TRUE of the lifeline of a life float or buoyant apparatus?
   - (A) The lifeline shall be festooned in bights not longer than three feet long
   - (B) Shall have a seine float in each bight unless the line is an inherently buoyant material
   - (C) The line shall be at least 3/8 inch diameter and properly secured around the sides and ends of the device
   - (D) All of the above

   If choice D is selected set score to 1.

3. Which of the following when removed will extinguish a fire?
   - (A) Oxygen
   - (B) Carbon dioxide
   - (C) Sodium
   - (D) Nitrogen

   If choice A is selected set score to 1.

4. What is the purpose of a water spray system on a covered lifeboat?
   - (A) It keeps the lifeboat warm in a cold climate by applying heated water spray from the engine to the boat
   - (B) It protects the lifeboat from reaching combustion temperature while operating in a fire
   - (C) The system will put out a fire inside the lifeboat
   - (D) The spray system cools the lifeboat engine

   If choice B is selected set score to 1.

5. Inflatable liferafts are provided with a __________.
   - (A) lifeline
   - (B) knife
   - (C) towing connection
   - (D) All of the above

   If choice D is selected set score to 1.
6. On a vessel, which information can be obtained by multiplying a load's weight by the distance of the load's center of gravity above the baseline?

- (A) Transverse moment
- (B) Righting moment
- (C) Vertical moment
- (D) Inclining moment

*If choice C is selected set score to 1.*

7. Which radiotelephone transmission may be sent over channel 16?

- (A) Call to a particular station
- (B) Distress signal MAYDAY
- (C) On scene SAR operations
- (D) All of the above

*If choice D is selected set score to 1.*

8. A vessel trimmed by the stern has a __________.

- (A) list
- (B) sheer
- (C) set
- (D) drag

*If choice D is selected set score to 1.*

9. While you are on watch, you learn that a crewman has not been seen on board for the past three hours. Which type of turn is best in this man-overboard situation?

- (A) Single turn of 180°
- (B) Round
- (C) Scharnow
- (D) Racetrack

*If choice C is selected set score to 1.*

10. The vessel shown in illustration D025DG has broken down and you are going to take her in tow. The wind is on her starboard beam. Both vessels are making the same amount of leeway. Where should you position your vessel when you start running lines?

- (A) A
- (B) B
- (C) C
- (D) D

*If choice C is selected set score to 1.*
11. Which is TRUE concerning a fuel-air mixture below the lower flammable limit?
   - (A) The mixture is too dense to burn
   - (B) The mixture is too rich to burn
   - (C) The mixture is too cool to burn
   • (D) The mixture is too lean to burn

   If choice D is selected set score to 1.

12. By day, what is the signal meaning, “This is the best place to land“?
   - (A) Vertical motion of a red flag
   • (B) Vertical motion of a white flag or the arms
   - (C) A white star rocket
   - (D) A white smoke signal

   If choice B is selected set score to 1.

13. Which is TRUE concerning the most serious effect trapped air has on a diesel engine jacket water cooling system?
   - (A) Reduces the effectiveness of chromate additives
   - (B) Accelerates formation of sludge deposits
   • (C) Accelerates corrosion in the system
   - (D) Forms pockets of high chemical concentrates

   If choice C is selected set score to 1.

14. Free communication will adversely affect transverse stability only when the flooded space is
   ____________________.

   • (A) off-center
   - (B) open to the sea above and below the waterline
   - (C) on the centerline
   - (D) completely flooded

   If choice A is selected set score to 1.

15. Which extinguishing agent is most effective on a mattress fire?
   - (A) Dry Chemical
   • (B) Water
   - (C) CO2
   - (D) Halon

   If choice B is selected set score to 1.
16. If you receive the signal over radiotelephone of "Romeo Papa Tango" while using the International Code of Signals, which action should you take?

- (A) Repeat your last transmission
- (B) End the transmission
- (C) Report to the caller
- (D) Continue since he received your last transmission

*If choice A is selected set score to 1.*

17. How does the rotation of the steering wheel on the navigation bridge initiate oil pressure being applied to the steering gear rams?

- (A) It is moving the automatic differential valve
- (B) By varying the angle of a tilting box or eccentricity of a floating ring
- (C) By regulating the oil flow with the six-way valve
- (D) It is moving the follow up indicator which regulates the six-way valve

*If choice B is selected set score to 1.*

18. What is NOT a function of the steam drum of a marine water-tube boiler?

- (A) Holds internal fittings for separation of moisture from steam
- (B) Serves as a reservoir of boiler feedwater
- (C) Collects steam exhausted from the turbines
- (D) Receives saturated steam from the generating tubes

*If choice C is selected set score to 1.*

19. What is the function of bottles of compressed air in a lifeboat?

- (A) Additional flotation for the craft
- (B) To prime the sprinkler system
- (C) For filling the self righting bags
- (D) As an air supply for personnel

*If choice D is selected set score to 1.*

20. When is it recommended that Seawater be used for drinking?

- (A) After mixing with an equal quantity of fresh water
- (B) Only at a maximum rate of two ounces per day
- (C) If gathered during or immediately after a hard rain
- (D) Under no conditions should seawater be drunk

*If choice D is selected set score to 1.*
21. You are picking up a conscious person that has fallen overboard in one of the vessel's motor boats. Recovery is easier in a light breeze if you approach from which direction?

- (A) Windward with the victim to leeward
  - (B) Leeward with the victim to windward
  - (C) Approach with the wind on your starboard side
  - (D) Approach with the wind on your port side

*If choice A is selected set score to 1.*

22. With the sprinkler system and air system on and all hatches shut, what will the survival craft provide protection from?

- (A) Hurricanes
- (B) A drop greater than 10 feet
- (C) A fire and toxic environment
- (D) A nuclear fall out environment

*If choice C is selected set score to 1.*

23. Why are deck beams cambered on a vessel?

- (A) To provide drainage from the decks
  - (B) To relieve deck stress
  - (C) To increase their strength
  - (D) To allow for welding expansion

*If choice A is selected set score to 1.*

24. For the purpose of training and drills, if reasonable and practicable, how frequently should rescue boats be launched with their assigned crew?

- (A) Twice a year
- (B) Once a week
  - (C) Once a month
  - (D) Once a year

*If choice C is selected set score to 1.*

25. If the steersman of your lifeboat gives the command "Way enough", which action should you take?

- (A) Complete the stroke, raise your oar slightly, swing it forward, and place it in the boat
  - (B) Complete the stroke, hold your oar out from the boat and level with the water
  - (C) Lift your oar to a vertical position
  - (D) Dip the blade of your oar into the water and leave it there

*If choice A is selected set score to 1.*
26. You are trying to rescue survivors from a wrecked vessel on fire. How should you make your approach?

- (A) At a speed of at most one-half that of the wrecked vessel
- (B) To leeward of the wrecked vessel
- (C) At a speed of at least that of the wrecked vessel
- (D) To windward of the wrecked vessel

*If choice D is selected set score to 1.*

27. During a SAR helicopter evolution the rescue sling is the most widely used method of extraction. Which of the following describes the alternate Double Lift Method used to pick-up incapacitated persons?

- (A) A normal rescue sling and a rescue seat used to simultaneously extract multiple personnel
- (B) Two normal rescue slings one manned by a helicopter crew member
- (C) A normal rescue sling and a seating belt manned by a helicopter crew member
- (D) A normal rescue sling and a rescue net used to simultaneously extract multiple personnel

*If choice C is selected set score to 1.*

28. The wooden plug inserted in the vent of a damaged tank should be removed if you are going to __________.

- (A) fight a fire
- (B) use the crossover system
- (C) pump from the damaged tank
- (D) abandon ship

*If choice C is selected set score to 1.*

29. What is the operating principal of a flash type evaporator?

- (A) Sea water is heated to boiling temperature under a vacuum.
- (B) Sea water is forced through a heated eductor.
- (C) Sea water is passed over heated plates in a thin film.
- (D) Heated sea water is injected into a vacuum chamber.

*If choice D is selected set score to 1.*

30. Which is TRUE of the vessel's Sheer Plan?

- (A) The plan has the forebody to the right of centerline and afterbody to the left of centerline
- (B) The plan is an endwise view of the ship's molded form
- (C) The plan is usually drawn for the port side only
- (D) The plan shows a longitudinal side elevation

*If choice D is selected set score to 1.*
31. You should be most concerned about a possible explosion or fire in fuel tanks __________.

- (A) during fueling when the fuel strikes fuel already in the tank
- (B) when underway as the fuel is moved by wave action
- (C) shortly after fueling when fuel vapors gather
- (D) during fueling when the fuel first strikes the tank bottom

*If choice D is selected set score to 1.*

32. A weight of 1,000 short tons is equivalent to __________.

- (A) 1,500 foot-pounds
- (B) 2,000 pounds
- (C) 2,000 kips
- (D) 2,240 long tons

*If choice C is selected set score to 1.*

33. If you are fighting a fire below the main deck of your vessel, which action is most important concerning the stability of the vessel?

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

*If choice B is selected set score to 1.*

34. When patching holes in the hull, how can pillows, bedding, and other soft materials be used?

- (A) As wedges
- (B) As gaskets
- (C) As shores
- (D) As strongbacks

*If choice B is selected set score to 1.*

35. You are releasing carbon dioxide gas (CO2) into an engine compartment to extinguish a fire. In which situation will the CO2 be most effective?

- (A) The compartment is closed and ventilators are opened
- (B) The compartment is closed and airtight
- (C) Air flow to the compartment is increased with blowers
- (D) The compartment is left open to the air

*If choice B is selected set score to 1.*
36. Your vessel has been taking on water but now the breached hole has been repaired. Which effects can the flooding have on your vessel's GM?

- (A) Flooding can either increase or decrease GM
- (B) Flooding will always decrease GM
- (C) Flooding will always increase GM
- (D) Flooding will neither increase or decrease GM

*If choice A is selected set score to 1.*

37. The important initial stability parameter, GM, is which of the following?

- (A) The height of the center of gravity above the keel
- (B) The metacentric height
- (C) The height of the metacenter above the keel
- (D) The height of the center of buoyancy above the keel

*If choice B is selected set score to 1.*

38. Which action should you take after sending a false Distress alert on VHF?

- (A) Make a voice announcement to cancel the alert on Ch-16.
- (B) Make a voice announcement to cancel the alert on Ch-13.
- (C) Send a DSC cancellation message on Ch-70.
- (D) Make a voice announcement to cancel the alert on Ch-22A.

*If choice A is selected set score to 1.*

39. When evacuating a seaman by helicopter lift, which course should the ship take?

- (A) A course that will have the hoist area in the lee of the superstructure.
- (B) A course that will keep a free flow of air, clear of smoke, over the hoist area.
- (C) Downwind so that the apparent wind is close to nil.
- (D) With the wind dead ahead because the helicopter is more maneuverable when going into the wind.

*If choice B is selected set score to 1.*

40. Dry chemical fire extinguishers are effective on which type(s) of fire?

- (A) Paint
- (B) Electrical
- (C) Burning oil
- (D) All of the above

*If choice D is selected set score to 1.*
41. 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.*

42. What is the best indication of the loading of a diesel engine?

- (A) Manifold pressure
- (B) Oil temperature
- (C) Fuel consumption
- (D) Exhaust gas temperature

*If choice D is selected set score to 1.*

43. Which is an advantage of using watertight longitudinal divisions in double bottom tanks?

- (A) Increases the rolling period
- (B) Lowers the center of buoyancy without decreasing GM
- (C) Cuts down free surface effect
- (D) Decreases weight because extra stiffeners are unneeded

*If choice C is selected set score to 1.*

44. Fires of which class would most likely occur in the engine room of a vessel?

- (A) Classes C and D
- (B) Classes B and C
- (C) Classes A and B
- (D) Classes A and D

*If choice B is selected set score to 1.*

45. Which is TRUE of a distress signal?

- (A) It may be used individually or in conjunction with other distress signals
- (B) It is is used to indicate doubt about another vessel's intentions
- (C) It shall consists of the raising and lowering of a large white flag
- (D) It shall consists of 5 or more short blasts of the fog signal apparatus

*If choice A is selected set score to 1.*
46. The Master of a cargo or tank vessel shall be responsible that each lifeboat, except those free-fall launched, is lowered to the water with crew and maneuvered. Which time interval is this action required?

- (A) Once a week
- (B) Once a month
- (C) Once every three months
- (D) Once a year

*If choice C is selected set score to 1.*

47. A squeeze-grip type carbon dioxide portable fire extinguisher has been partially discharged. Which action should be taken?

- (A) Replaced in its proper location if weight loss is no more than 15%
- (B) Labeled empty and recharged as soon as possible
- (C) Replaced in its proper location regardless of weight
- (D) Replaced in its proper location if weight loss is no more than 25%

*If choice B is selected set score to 1.*

48. Normally, it is desirable to have screens on the vents of potable water tanks to __________.

- (A) filter the incoming air
- (B) prevent explosions
- (C) stop insects from entering
- (D) prevent backups

*If choice C is selected set score to 1.*

49. You have a large, broken-down vessel in tow with a wire rope and anchor cable towline. Both vessels have made provision for slipping the tow in an emergency; however, unless there are special circumstances __________.

- (A) the vessel towed should slip first
- (B) they should slip simultaneously
- (C) the towing vessel should slip first
- (D) either vessel may slip first

*If choice C is selected set score to 1.*

50. In an emergency, which can directly control the electro-hydraulic steering units on the vessel?

- (A) The trick wheel in the steering gear room
- (B) The receiver unit
- (C) The rapson slide in the steering gear room
- (D) The follow-up gear

*If choice A is selected set score to 1.*
51. You board an inflatable life raft that has been hand launched from a sinking vessel. What should you do FIRST after everyone is onboard the life raft?

- (A) Ventilate the life raft of CO2.
- (B) Cut the painter.
- (C) Open the equipment pack.
- (D) Operate the radio equipment.

*If choice B is selected set score to 1.*

52. Which precaution should be taken when testing a line throwing gun?

- (A) Fire it at an angle of approximately 90 degrees to the horizon.
- (B) Wear asbestos gloves.
- (C) Never remove the line from the rocket.
- (D) All of the above

*If choice C is selected set score to 1.*

53. You must shore up a bulkhead due to solid flooding forward. The bulkhead approximates a rectangle. Where should the center of pressure of the shores be located on the bulkhead?

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

*If choice C is selected set score to 1.*

54. CO₂ mainly extinguishes a fire by which of the following?

- (A) chemical action
- (B) smothering
- (C) cooling
- (D) All of the above

*If choice B is selected set score to 1.*

55. In a racetrack turn, to recover a man overboard, the vessel is steadied for the SECOND time after a turn of how many degrees from the original heading?

- (A) 60°
- (B) 135°
- (C) 180°
- (D) 360°

*If choice D is selected set score to 1.*
56. Accumulations of oily rags should be ___________.

- (A) discarded as soon as possible
- (B) cleaned thoroughly for reuse
- (C) kept in nonmetal containers
- (D) kept in the paint locker

*If choice A is selected set score to 1.*

57. Who issues the regulations governing the frequencies of the bridge-to-bridge radiotelephone?

- (A) U.S. Coast Guard
- (B) Federal Communications Commission
- (C) Department of Transportation
- (D) Department of Defense

*If choice B is selected set score to 1.*

58. What is the danger to personnel associated with using carbon dioxide in an enclosed space?

- (A) Asphyxiation
- (B) An explosive reaction
- (C) Skin burns
- (D) Frostbite

*If choice A is selected set score to 1.*

59. What is the signal used with shore lifesaving equipment to indicate, “Affirmative”?

- (A) Firing of a red star signal
- (B) Vertical motion of the arms
- (C) Code signal "C" sent by light or sound signaling apparatus
- (D) None of the above

*If choice B is selected set score to 1.*

60. When should the lubricating oil be changed on a heavy duty diesel engine?

- (A) When it no longer supports combustion
- (B) When it gets dark in color
- (C) Only when a sample rubbed between fingers feels thin
- (D) When it has been in use for a specified interval

*If choice D is selected set score to 1.*
61. After a liferaft is launched, the operating cord __________.
   - (A) is cut immediately as it is of no further use
   - (B) detaches automatically
   - (C) is used to rig the boarding ladder
   - (D) serves as a sea painter

   *If choice D is selected set score to 1.*

62. Which item is of the most use in getting a lifeboat away from a moving ship?
   - (A) Fleming Gear
   - (B) Boat hook
   - (C) The falls
   - (D) Sea painter

   *If choice D is selected set score to 1.*

63. When the height of the metacenter is the same as the height of the center of gravity of a vessel, what will be the upright equilibrium?
   - (A) A negative equilibrium
   - (B) An unstable equilibrium
   - (C) A stable equilibrium
   - (D) A neutral equilibrium

   *If choice D is selected set score to 1.*

64. A foam-type portable fire extinguisher would be most useful in combating which type of fire?
   - (A) A fire from flammable liquids
   - (B) A fire in solid materials such as wood or bales of fiber
   - (C) A fire from combustible metallic solids
   - (D) A fire in a piece of electrical equipment

   *If choice A is selected set score to 1.*

65. The searchlight on a survival craft must be capable of operating 3 hours continuously or 6 hours intermittently if operated in which cycles?
   - (A) 5 minutes on and 10 minutes off
   - (B) 10 minutes on and 5 minutes off
   - (C) 15 minutes on and 5 minutes off
   - (D) 15 minutes on and 10 minutes off

   *If choice C is selected set score to 1.*
66. What does a pyrometer measure on a diesel engine?

- (A) Exhaust temperature
- (B) Air box pressure
- (C) Water pressure
- (D) Water temperature

*If choice A is selected set score to 1.*

67. The operating cord on an inflatable liferaft should be renewed by __________.

- (A) cutting the line where it enters the case and replacing that portion
- (B) an approved servicing facility ashore
- (C) removing the top half of the shell, cutting the line at its source, and renewing completely
- (D) leaving the original line and tying another one to it so the two lines will take the strain

*If choice B is selected set score to 1.*

68. Which statement about the free surface correction is TRUE?

- (A) It is added to the uncorrected GM to arrive at the corrected available GM.
- (B) It is subtracted from the total longitudinal moments before dividing by displacement to find LCG.
- (C) It is obtained by dividing the free surface moments by 12 times the volume of displacement.
- (D) It is obtained by dividing the total free surface by the total vertical moments.

*If choice C is selected set score to 1.*

69. You have carbon tetrachloride as part of the cargo. If a fire breaks out in the general area, what is the major danger from the carbon tetrachloride?

- (A) It will explode if exposed to a flame.
- (B) It will burn rapidly once ignited.
- (C) You cannot use water to fight the fire because it will react with the carbon tetrachloride.
- (D) Phosgene gas may be formed if it comes in contact with hot metal.

*If choice D is selected set score to 1.*

70. Which statement is TRUE concerning distress signals in a lifeboat?

- (A) If hand-held rocket-propelled parachute flares are provided, they are the only distress signals required in a lifeboat
- (B) A Very pistol with twelve flares is required in a lifeboat
- (C) Parachute flares, hand held flares and orange smoke signals are required in a lifeboat
- (D) Two hand-held smoke signals and two parachute flare are required in a lifeboat

*If choice C is selected set score to 1.*