

U.S.C.G. Merchant Marine Exam

OUPV to Master or Mate Less than 200 GRT
Great Lakes and Inland

Q346 Navigation and Deck General - Safety
(Sample Examination)

Choose the best answer to the following Multiple Choice Questions.

1. When is the greatest directive horizontal force exerted on the magnetic compass of a vessel?

- (A) When the variation is near zero
- (B) When the vessel is near the magnetic equator
- (C) When the vessel is near the magnetic poles
- (D) When the compass needles are nearly in line with the meridian

If choice B is selected set score to 1.

2. In the presence of external forces, the center of buoyancy of an inclined vessel is vertically aligned with which item?

- (A) The center of flotation
- (B) The keel
- (C) The metacenter
- (D) The center of gravity

If choice C is selected set score to 1.

3. Your ship is entering port from sea, and you sight a pair of range lights. When in line, they bear 315° per standard magnetic compass. The chart shows that the range bearing is 312°T , and that variation is 6°W . What is the deviation of your compass at the time of the sighting?

- (A) 3°E
- (B) 3°W
- (C) 9°E
- (D) 9°W

If choice A is selected set score to 1.

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

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

If choice A is selected set score to 1.

5. Which term defines the difference between the forward and aft drafts?

- (A) Trim
- (B) Flotation
- (C) List
- (D) Heel

If choice A is selected set score to 1.

6. A snatch block would most likely be used as a _____.

- (A) topping lift
- (B) fairlead
- (C) boat fall
- (D) riding pawl

If choice B is selected set score to 1.

7. The force acting on a single cargo runner which is vertically lifting or lowering a load is greatest when _____.

- (A) lowering the load at constant speed
- (B) raising the load at constant speed
- (C) decelerating when lowering the load
- (D) decelerating when raising the load

If choice C is selected set score to 1.

8. Which of the following statements is/are TRUE in regard to Ro-Ro vessels' spaces which are "specially suitable for vehicles"?

- (A) The spaces shall be fitted with an approved fire or smoke detecting system.
- (B) The spaces shall be fitted with an approved fixed fire extinguishing system.
- (C) The Commandant may permit the installation of an approved water sprinkler extinguishing system.
- (D) All of the above

If choice D is selected set score to 1.

9. The boom stops on a pedestal crane prevent the boom from _____.

- (A) being lowered too low
- (B) swinging at sea
- (C) being raised too high
- (D) overloading when not in use

If choice C is selected set score to 1.

10. Where is the molded depth measured from on a vessel?

- (A) The inside of the shell
- (B) The outside of the shell
- (C) The top of the garboard stake
- (D) The top of the center vertical keel

If choice A is selected set score to 1.

11. When adjusting a magnetic compass for error, which is TRUE concerning the deviation table?

- (A) Construct the deviation table before the quadrantal correctors are placed on the compass
- (B) Construct the deviation table before correcting for any deviation
- (C) Construct the table after adjusting the fore-and-aft permanent magnets
- (D) Construct the deviation table after correcting for variation

If choice C is selected set score to 1.

12. Which term is given to the process of separating both blocks of a tackle to prepare it for reuse?

- (A) Out-hauling
- (B) Over-hauling
- (C) Two-blocking
- (D) Chockablocking

If choice B is selected set score to 1.

13. What statement about immersion suits is TRUE?

- (A) Any tear or leak will render the suit unserviceable and it must be replaced.
- (B) No stowage container for immersion suits may be capable of being locked.
- (C) During the annual maintenance, the front zipper should be lubricated using light machine oil or mineral oil.
- (D) Immersion suits should be worn while performing routine work on deck.

If choice B is selected set score to 1.

14. Cargo pumprooms on tank vessels, constructed in 1965, handling grade C liquid cargo shall have power ventilation systems. What is time requirement for these ventilation systems to completely change the air?

- (A) 1 minute
- (B) 3 minutes
- (C) 5 minutes
- (D) 10 minutes

If choice B is selected set score to 1.

15. All personnel on board a vessel should be familiar with the rescue boat's _____.

- (A) fuel consumption rates
- (B) navigational systems
- (C) maintenance schedules
- (D) boarding and operating procedure

If choice D is selected set score to 1.

16. To reduce the number of strakes at the bow, two strakes are tapered and joined at their ends by a single plate. What is the name of this plate?

- (A) Joiner
- (B) Cover plate
- (C) Stealer plate
- (D) Lap strake

If choice C is selected set score to 1.

17. The deck beam brackets of a transversely framed vessel resist which stresses?

- (A) Hogging stresses
- (B) Sagging stresses
- (C) Shearing stresses
- (D) Racking stresses

If choice D is selected set score to 1.

18. In illustration D016SA below, what number indicates the frapping line?

- (A) 1
- (B) 2
- (C) 3
- (D) 4

If choice B is selected set score to 1.

19. When a small craft's anchor fouls in a rocky bottom, how should the first attempt to clear it be made?

- (A) Hauling vertically on the line
- (B) Increasing the scope and running slowly in a wide circle with the anchor line taut
- (C) Reversing the angle and direction of pull, with moderate scope
- (D) Making the line fast to the bitt and bringing the vessel further forward

If choice C is selected set score to 1.

20. Which tackle arrangement has the LEAST mechanical advantage?

- (A) Luff tackle
- (B) Gun tackle
- (C) Twofold purchase
- (D) Single whip

If choice D is selected set score to 1.

21. A tank with internal dimensions of 40 feet X 20 feet X 12 feet is pressed with fuel oil weighing 54 pounds per cubic foot. What is the weight, in short tons, of the liquid?

- (A) 135.0 short tons
- (B) 259.2 short tons
- (C) 518.4 short tons
- (D) 11.3 short tons

If choice B is selected set score to 1.

22. Your 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.

23. Each distress signal and self-activated smoke signal must be replaced not later than the marked date of expiration, or, from the date of manufacture, not later than which time frame?

- (A) 6 months
- (B) 12 months
- (C) 24 months
- (D) 42 months

If choice D is selected set score to 1.

24. Which is the major disadvantage of a low-speed diesel as compared to a steam main-propulsion system?

- (A) The minimum speed for the engines that limits the minimum speed of the vessel
- (B) The higher fuel consumption per SHP
- (C) The extra weight required for the diesel reduction gearing
- (D) The low efficiency of the system when a controllable pitch propeller is used

If choice A is selected set score to 1.

25. Your vessel is anchored in an open roadstead with three shots of chain out on the port anchor. The wind freshens considerably and the anchor begins to drag. Which action should you take FIRST?

- (A) Veer out more chain on the port anchor.
- (B) Sheer out to starboard using the rudder, then drop the starboard anchor with about four shots of chain.
- (C) Put the engines slow ahead to help the anchor.
- (D) Drop the starboard anchor short with about one shot of chain.

If choice A is selected set score to 1.

26. When the handle of an all-purpose nozzle is pulled all the way back, it will _____.

- (A) shut off the water
- (B) produce high-velocity fog
- (C) produce a straight stream
- (D) produce low-velocity fog

If choice C is selected set score to 1.

27. What is the purpose of a striker plate?

- (A) Provides surface for applying force on machinery
- (B) Absorbs machinery vibration
- (C) Prevents valve stem over-travel
- (D) Provides landing surface for the sounding bob

If choice D is selected set score to 1.

28. What size block shell should be used with a 4-inch manila line?

- (A) 8"
- (B) 12"
- (C) 16"
- (D) 24"

If choice B is selected set score to 1.

29. In accordance with Coast Guard Regulations, which statement is TRUE with regards to Coast Guard approved buoyant work vests?

- (A) They should be stowed in engineering spaces in lieu of approved life jackets because they are less bulky and permit free movement in confined spaces
- (B) The vests may be used as a substitute for approved life preservers during routine drills, but never during an emergency
- (C) A work vests should not be stowed where they could be confused with life jackets in an emergency
- (D) All of the above

If choice C is selected set score to 1.

30. How often are each EPIRB and SART for lifeboats required to be tested on the vessel?

- (A) Weekly
- (B) Every 2 weeks
- (C) Monthly
- (D) Every 3 months

If choice C is selected set score to 1.

31. On an international voyage, a cargo vessel of 1,000 GT or more operating two fire pumps simultaneously is required to have a minimum pitot tube pressure from the two highest outlets. What is the minimum required pressure?

- (A) 50 psi
- (B) 70 psi
- (C) 100 psi
- (D) 35 psi

If choice A is selected set score to 1.

32. Your vessel is conducting helicopter evacuation operations for an injured crew member. Which of the following statements is true concerning the hoisting line?

- (A) A tag line is required to be attached to the hoist cable for securing
- (B) As a safety measure wrap the line around the patient before attaching it to the basket
- (C) Allow the line to touch the deck to discharge the static electricity
- (D) Secure the graining line to the deck railings

If choice C is selected set score to 1.

33. In illustration D033DG below, what is the structural member indicated by the letter L?

- (A) web frame
- (B) bilge keel
- (C) longitudinal
- (D) side keel

If choice C is selected set score to 1.

34. Which is TRUE concerning the painter of an inflatable liferaft?

- (A) Stowed under the raft to protect from the elements
- (B) Secured to permanent object on deck via weak link
- (C) Faked out next to the case on deck
- (D) Staged for free running on the deck

If choice B is selected set score to 1.

35. The stowage factor for a cargo is based cubic feet and which other item?

- (A) One long ton
- (B) One short ton
- (C) One long metric ton
- (D) One short metric ton

If choice A is selected set score to 1.

36. Which is the name given to the grooved wheel inside a block?

- (A) Sheave
- (B) Cheek
- (C) Gypsy
- (D) Drum

If choice A is selected set score to 1.

37. Who must ensure that the emergency lighting and power systems on cargo vessels are operated at least weekly?

- (A) Engineering officer assigned
- (B) Master
- (C) Deck officer assigned
- (D) Chief Engineer

If choice B is selected set score to 1.

38. How can the accuracy of an azimuth circle be checked?

- (A) ensuring that the alignment marks on the inner face of the circle are in line with those on the repeater on relative bearings of 000° and 090°
- (B) sighting a terrestrial range in line and comparing the observed bearing against the charted bearing
- (C) comparing observed azimuths at different altitudes with computed values at the times of observation to see if the difference is constant
- (D) aligning the relative bearing markings so that 000° is on the lubber's line and the line of sight passes over the center of the compass

If choice C is selected set score to 1.

39. Which of the signals listed is required to be displayed during the day while bunkering?

- (A) A red light
- (B) A red flag
- (C) A yellow flag
- (D) A red and yellow flag

If choice B is selected set score to 1.

40. What is the name of the mark indicated by the letter D in illustration D003DG below?

- (A) Tropical load line
- (B) Winter load line
- (C) Summer load line
- (D) Fresh load line

If choice A is selected set score to 1.

41. On tank vessels, fully charged fire extinguishers are considered semi-portable when they have a gross weight of more than _____.

- (A) 55 pounds
- (B) 75 pounds
- (C) 95 pounds
- (D) 125 pounds

If choice A is selected set score to 1.

42. What is the name of tackle number 12 as shown in illustration D029DG below?

- (A) Threefold purchase
- (B) Gin tackle
- (C) Davit tackle
- (D) Deck tackle

If choice A is selected set score to 1.

43. You are evacuating crew members from a survival craft that has been adrift in the North Atlantic for several days. What could occur if a person suffering from hypothermia is vertically lifted in a rescue sling to the helicopter?

- (A) A decrease in the symptoms of hypothermia
- (B) Temporary blindness from the altitude change
- (C) Severe shock or cardiac arrest
- (D) Frostbite on exposed areas

If choice C is selected set score to 1.

44. You are planning to anchor in an area where several anchors have been lost due to fouling. What precaution should you take?

- (A) Use a stern anchor with a scope of 8 or more to 1
- (B) Anchor with scope of 8 or more to 1
- (C) Only anchor using both anchors not set in bottom
- (D) Fit a crown strap and work wire to the anchor

If choice D is selected set score to 1.

45. Which statement about the deck line is TRUE?

- (A) The deck edge is marked at the intersection of the freeboard deck with the side shell, at the lowest point of sheer, with the vessel at even trim.
- (B) The top of the deck line is marked at the highest point of the freeboard deck, including camber, at the midships point.
- (C) A vessel with wooden planks on a steel deck will have the deck line marked at the intersection of the upper line of the wood sheathing with the side shell.
- (D) On a vessel with a rounded stringer-sheer plate, the deck line is marked where the stringer plate turns down from the plane of the deck line.

If choice C is selected set score to 1.

46. What provides little or no indication that a vessel is dragging anchor?

- (A) Increasing radar range to a fixed object ahead
- (B) Changing bearings to distant fixed objects abeam
- (C) Vibrations felt by placing a hand on the anchor cable
- (D) Drift lead with the line leading perpendicular to the centerline

If choice D is selected set score to 1.

47. What does a pyrometer measure on a diesel engine?

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

If choice B is selected set score to 1.

48. Which is TRUE if the compass heading and the magnetic heading are the same?

- (A) There is no deviation on that heading
- (B) There is something wrong with the compass
- (C) The compass is being influenced by nearby metals
- (D) The deviation has been offset by the variation

If choice A is selected set score to 1.

49. Which is required to be marked on the vessel's life preservers?

- (A) The crew member's article number
- (B) The vessel's name
- (C) The vessel's home port
- (D) The stowage space assigned

If choice B is selected set score to 1.

50. Which is a TRUE statement concerning the examining of cargo equipment at the time of a vessels Inspection for Certification?

- (A) Cargo booms must be weight tested at this time by the National Cargo Bureau.
- (B) Cargo booms must be weight tested at this time by the American Bureau of Shipping.
- (C) Cargo booms must be weight tested at this time by the U.S. Coast Guard.
- (D) No test at this time is required.

If choice D is selected set score to 1.

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

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

If choice B is selected set score to 1.

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

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

If choice D is selected set score to 1.

53. Which term describes the strengthening of damaged bulkheads by using wood or steel?

- (A) Shoring
- (B) Blocking
- (C) Bracing
- (D) Battening

If choice A is selected set score to 1.

54. What do the magnets placed in horizontal trays in the compass binnacle compensate for?

- (A) Induced magnetism in the vessel's horizontal soft iron
- (B) Change in the magnetic field when the vessel inclines from vertical
- (C) Magnetic fields caused by electrical currents in the vicinity
- (D) Permanent magnetism of the vessel

If choice D is selected set score to 1.

55. In illustration D033DG below, what is the plating indicated by the letter N known as?

- (A) Floor riders
- (B) Inner bottom
- (C) Ceiling
- (D) Tank-top rider plating

If choice B is selected set score to 1.

56. Overspeed of the diesel engine driving an electric generator could cause which to occur?

- (A) A reverse power trip
- (B) Excessive exhaust temperatures
- (C) Damage to windings
- (D) A low voltage trip

If choice C is selected set score to 1.

57. A motor lifeboat shall carry sufficient fuel to operate continuously for a period of which duration?

- (A) 12 hours
- (B) 18 hours
- (C) 24 hours
- (D) 36 hours

If choice C is selected set score to 1.

58. A 750 foot passenger vessel operating on the Great Lakes, not subject to SOLAS regulations, is required to carry how many ring life buoys?

- (A) 24
- (B) 18
- (C) 12
- (D) 6

If choice A is selected set score to 1.

59. When should the control of flooding of your vessel be addressed?

- (A) Only if a threat exists
- (B) Following control of fire
- (C) Following restoration of vital services
- (D) First

If choice B is selected set score to 1.

60. In illustration D041DG below, which is the symbol for amidships?

- (A) 2
- (B) 3
- (C) 4
- (D) 5

If choice B is selected set score to 1.

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

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

If choice A is selected set score to 1.

62. Which agency must approve the Safety equipment on board inspected vessels?

- (A) The National Safety Council
- (B) The Occupational Safety and Health Administration (OSHA)
- (C) The U.S. Coast Guard
- (D) The Safety Standards Bureau

If choice C is selected set score to 1.

63. What does the gross tonnage of a vessel indicate?

- (A) Total weight including cargo
- (B) Volume in cubic feet
- (C) Displacement in metric tons
- (D) Draft in feet

If choice B is selected set score to 1.

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

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

If choice B is selected set score to 1.

65. Before using a fixed CO₂ system to fight an engine room fire, you must _____.

- (A) secure the engine room ventilation
- (B) secure the machinery in the engine room
- (C) evacuate all engine room personnel
- (D) All of the above

If choice D is selected set score to 1.

66. What are the required number and type of hand portable fire extinguishers for a galley having an area of 3,500 square feet?

- (A) One B-II
- (B) One C-II
- (C) Two B-II's or C-II's
- (D) Two A-II's or B-II's

If choice C is selected set score to 1.

67. A ship's forward draft is 22'-04" and its after draft is 24'-00". The draft amidships is 23'-04". This indicates a concentration of weight is located at which of the following areas?

- (A) Amidships
- (B) In the lower holds
- (C) At the bow
- (D) At the ends

If choice A is selected set score to 1.

68. Why are diesel engines considered safer than gasoline engines?

- (A) They are more heavily built
- (B) They can be easily reversed
- (C) They operate at a lower speed
- (D) The fuel used is less volatile

If choice D is selected set score to 1.

69. When electrical equipment is involved in a fire, where should the stream of dry chemicals be directed?

- (A) Fogged above the equipment
- (B) Shot off a flat surface onto the flames
- (C) Aimed at the source of the flames
- (D) Used to shield against electrical shock

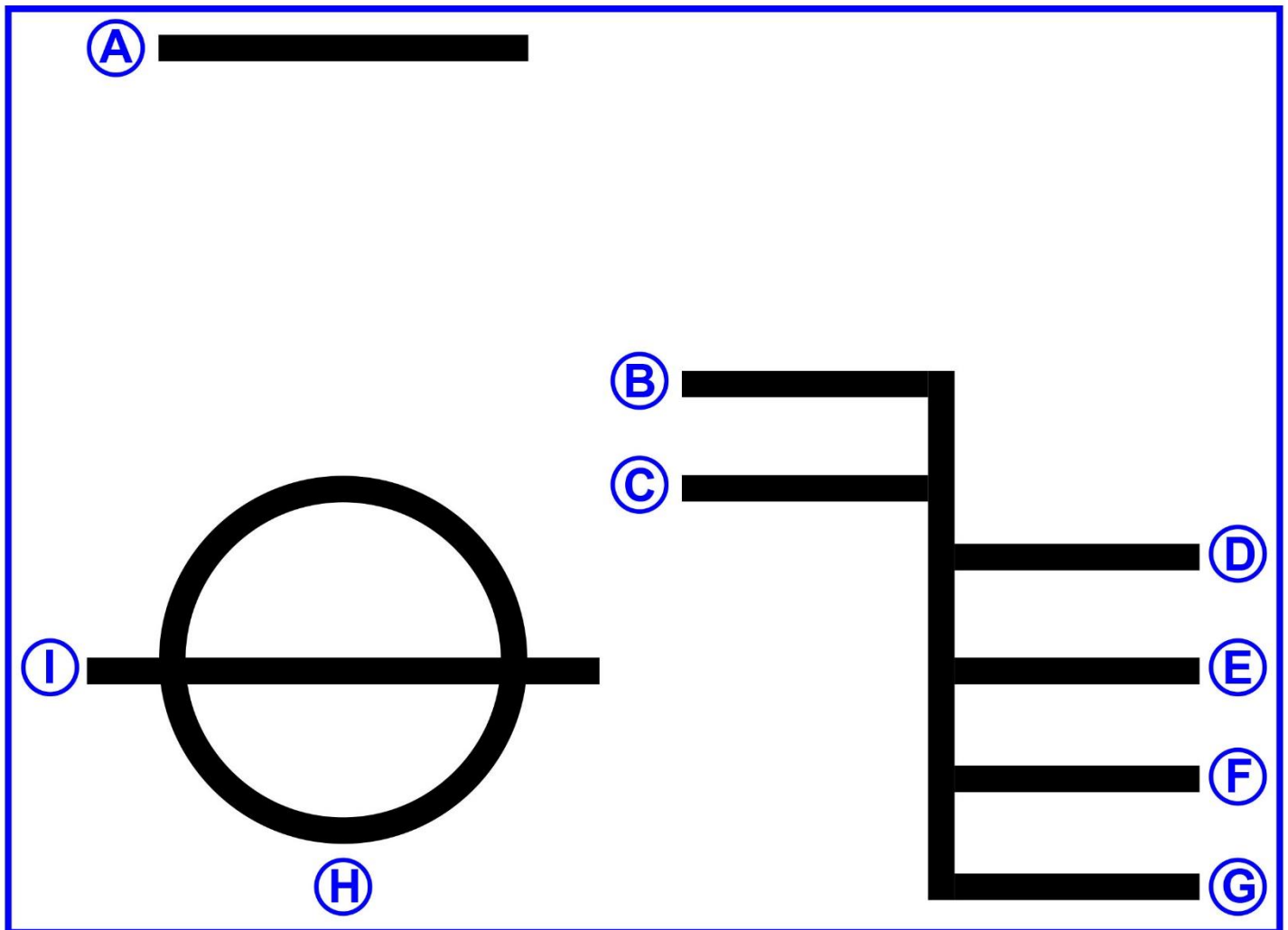
If choice C is selected set score to 1.

70. You are tending the lifeline of a person who has entered a compartment wearing a breathing apparatus. How many tugs of the lifeline mean "Are you all right"?

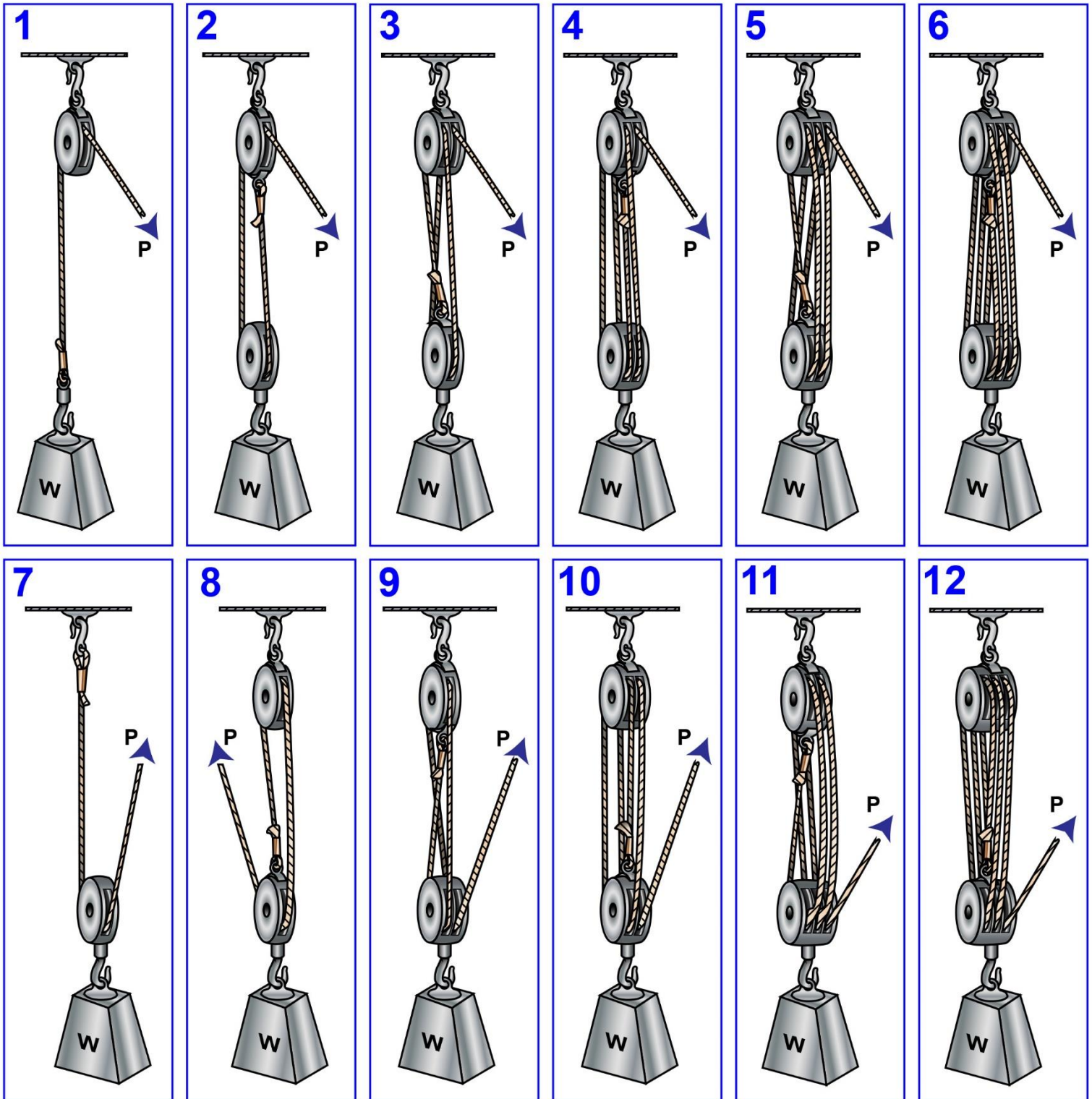
- (A) One
- (B) Two
- (C) Three
- (D) Four

If choice A is selected set score to 1.

D003DG



D029DG

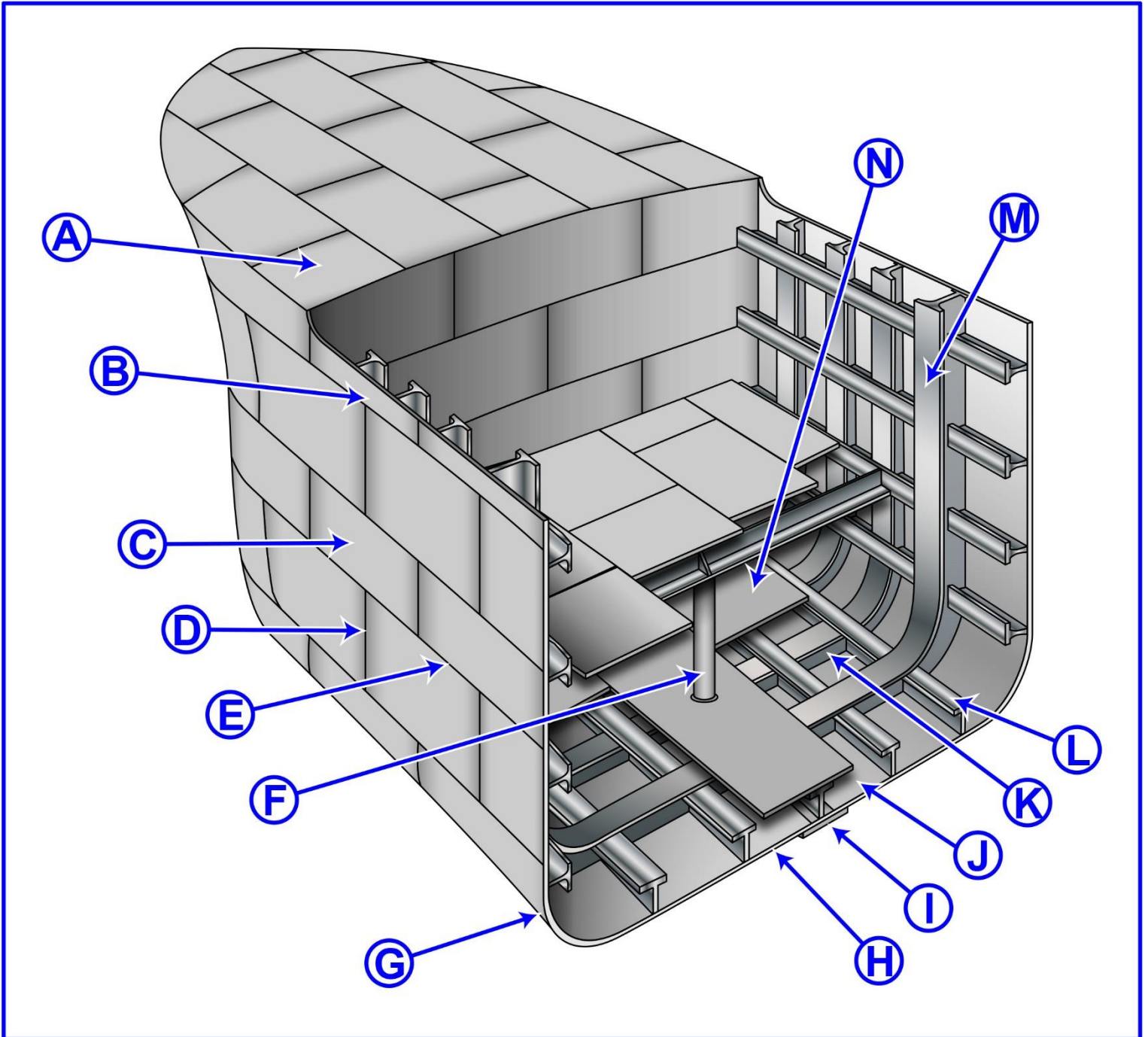


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D033DG

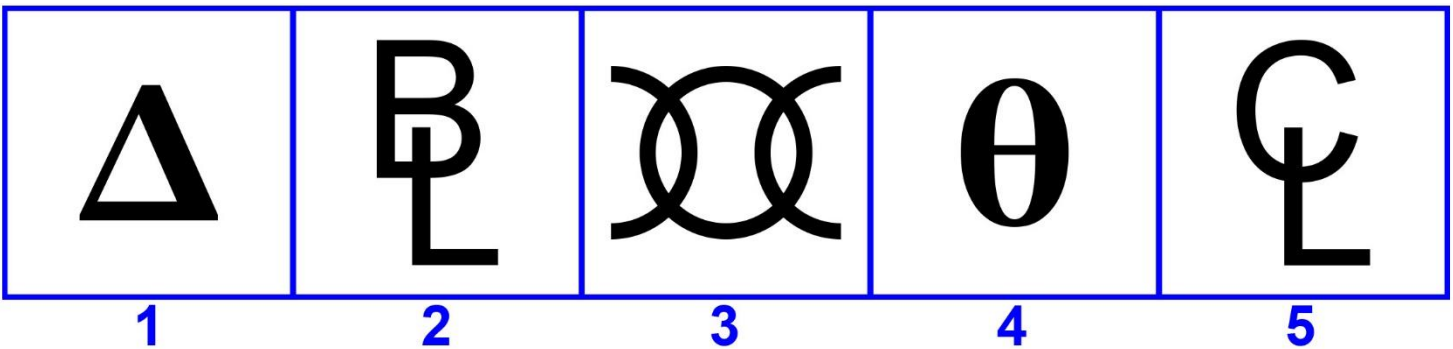


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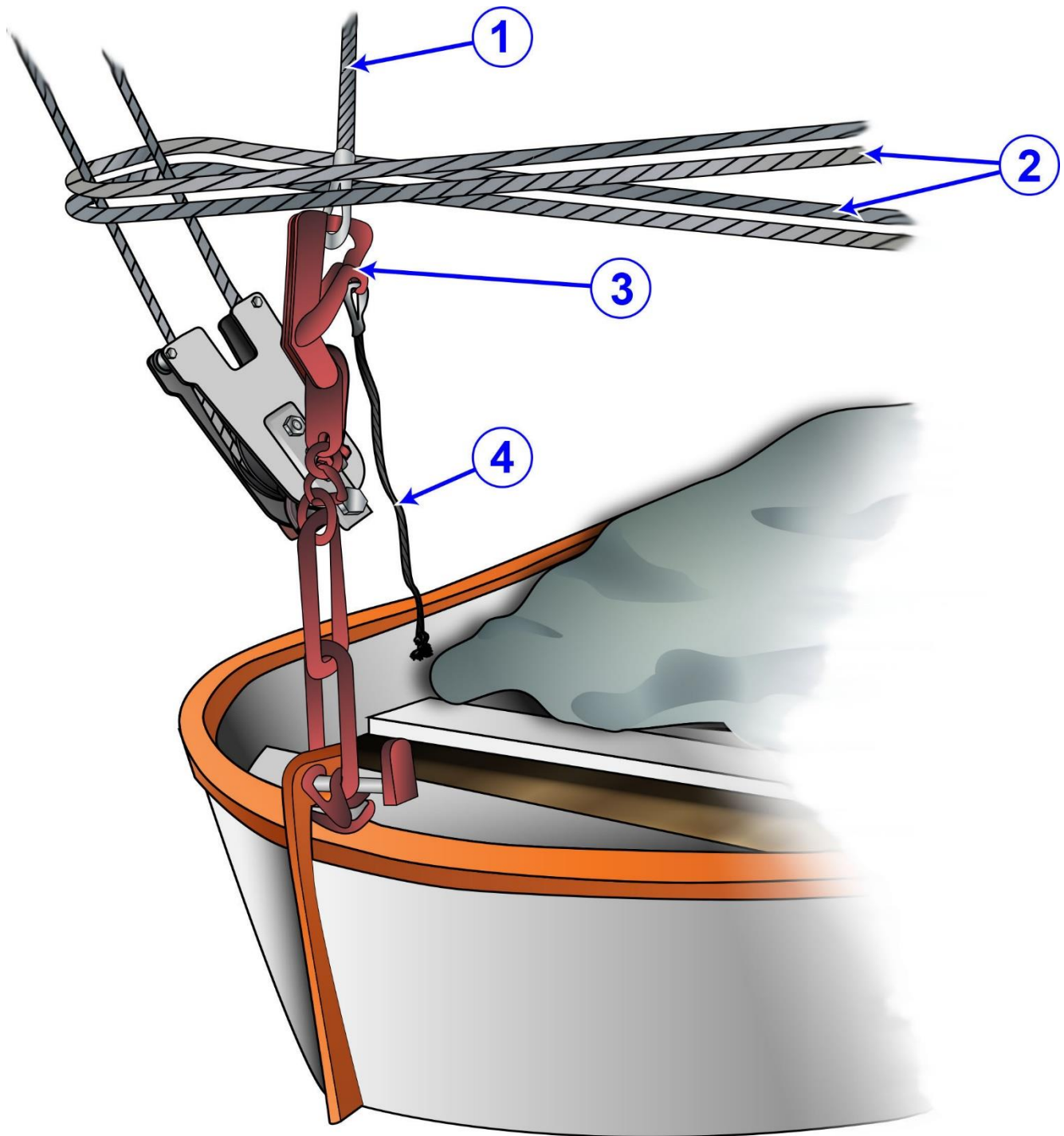
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