

## 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. According to regulations, how many portable fire extinguishers are required in the cargo tank area of an unmanned, cargo pump-equipped tank barge engaged in transferring grade B flammable liquids?
- A. One B-I extinguisher or post 2017 One 40-B extinguisher
  - B. None are required in the tank area of a tank barge
  - C. Two B-II extinguishers or post 2017 Two 40-B extinguishers
  - D. Three B-II extinguishers or post 2017 Three 40-B extinguishers

Correct answer: C

2. If you reach shore in a liferaft, the first thing to do is \_\_\_\_\_.
- A. drag the raft ashore and lash it down for a shelter
  - B. find some wood for a fire
  - C. set the raft back out to sea so someone may spot it
  - D. get the provisions out of the raft

Correct answer: A

3. What is the stress on the hauling part when lifting a 4,200 lbs. weight using a threefold purchase rove to advantage? (Allow 10 percent of the weight per sheave for friction.)
- A. 571.4
  - B. 715.2
  - C. 960.0
  - D. 1066.7

Correct answer: C

4. Which is TRUE if passengers are on board when an abandon ship drill is carried out?
- A. Passengers should go to their quarters during drills
  - B. The passengers should just watch
  - C. The passengers should stay out of the way and do what they want
  - D. The passengers should take part in the drill

Correct answer: D

5. What do the magnets placed in horizontal trays in the compass binnacle compensate for?
- A. Magnetic fields caused by electrical currents in the vicinity
  - B. Change in the magnetic field when the vessel inclines from vertical
  - C. Induced magnetism in the vessel's horizontal soft iron
  - D. Permanent magnetism of the vessel

Correct answer: D

6. When shoring a damaged bulkhead, effort should be taken to spread the pressure over the \_\_\_\_\_.
- A. minimum possible area
  - B. nearest watertight door
  - C. maximum possible area
  - D. nearest longitudinal girder

Correct answer: C

7. A well in the uppermost deck of a shelter deck vessel which has only a temporary means of closing for the purpose of gaining an exemption from tonnage measurement is called a(n) \_\_\_\_\_.
- A. tonnage opening
  - B. cofferdam
  - C. exemption space
  - D. tonnage deck

Correct answer: A

8. When a small craft's anchor fouls in a rocky bottom, how should the first attempt to clear it be made?
- A. Reversing the angle and direction of pull, with moderate scope
  - B. Making the line fast to the bitt and bringing the vessel further forward
  - C. Increasing the scope and running slowly in a wide circle with the anchor line taut
  - D. Hauling vertically on the line

Correct answer: A

9. In illustration D033DG below, what is a wooden deck installed on top of the plating lettered N known as?
- A. Flooring
  - B. Ceiling
  - C. Spar decking
  - D. Furring

Correct answer: B

10. What are the required number and type of hand portable fire extinguishers to be carried, in the vicinity of the radio room exit, on a tank vessel on an international voyage?
- A. One B-I or post 2017 One 10-B:C
  - B. One B-II or post 2017 One 40-B
  - C. One C-I or post 2017 One 10-C
  - D. One C-II or post 2017 One 20-B:C

Correct answer: D

11. A snatch block would most likely be used as a \_\_\_\_\_.

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

Correct answer: B

12. What power source actuates a solenoid valve?

- A. Electric current
- B. Mechanical force
- C. Hydraulic pressure
- D. Air pressure

Correct answer: A

13. Your vessel is proceeding up a channel, and you see a pair of range lights that are in line ahead. The chart indicates that the direction of this pair of lights is  $147^{\circ}T$ , and the variation is  $5^{\circ}E$ . If the heading of your vessel at the time of the sighting is  $148^{\circ}$  per standard magnetic compass, what is the correct deviation?

- A.  $1^{\circ}E$
- B.  $1^{\circ}W$
- C.  $6^{\circ}E$
- D.  $6^{\circ}W$

Correct answer: D

14. When the height of the metacenter is less than the height of the center of gravity, a vessel has which type of stability?

- A. Stable
- B. Negative
- C. Positive
- D. Neutral

Correct answer: B

15. In reference to accidental oil pollution, the most critical time during bunkering is when \_\_\_\_\_.

- A. Hoses are being disconnected
- B. Final topping off is occurring
- C. You first start to receive fuel
- D. Hoses are being blown down

Correct answer: B

16. What is another name for the garboard strake?

- A. Side keel plate
- B. A strake
- C. Stringer plate
- D. Z strake

Correct answer: B

17. 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 year
- B. Twice a year
- C. Once a week
- D. Once a month

Correct answer: D

18. Which item is NOT required to be marked with the vessel's name?

- A. Immersion suit
- B. Lifeboat oar
- C. Hand-portable fire extinguisher
- D. Life preserver

Correct answer: C

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

- A. Over-hauling
- B. Out-hauling
- C. Chockablocking
- D. Two-blocking

Correct answer: A

20. Most medium and slow speed diesels are started by what medium?

- A. Hydraulics
- B. Compressed air
- C. Ether
- D. Electric starting motors

Correct answer: B

21. Which statement about the deck line is TRUE?

- A. 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.
- B. 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.
- C. The top of the deck line is marked at the highest point of the freeboard deck, including camber, at the midships point.
- D. 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.

Correct answer: B

22. What is the minimum number of fire pumps required on a cargo vessel of 2,000 GT?

- A. 1
- B. 2
- C. 3
- D. 4

Correct answer: B

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

- A. Slew rate limits
- B. Slew travel limits
- C. Luff rate limits
- D. Swivel power limits

Correct answer: B

24. Which extinguishing agent is most likely to allow reflash as a result of not cooling the fuel below its ignition temperature?

- A. Water spray
- B. Water stream
- C. Foam
- D. CO<sub>2</sub>

Correct answer: D

25. Safety shackles are fitted with which items?

- A. A threaded bolt
- B. A threaded bolt, locknuts, and cotter pins
- C. A round pin, with a cotter pin
- D. Round pins and locknuts

Correct answer: B

26. 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

Correct answer: D

27. Which condition must be met during a stability test on an inspected vessel?

- A. All dunnage, tools, and extraneous items are secured
- B. Each tank must be partially full to show it does not leak
- C. The vessel must be moored snugly
- D. Water under vessel must be deep enough to prevent grounding

Correct answer: D

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

Correct answer: D

29. Cargo tanks on barges fitted with goose neck vents and flame screens are limited to carrying which grade of cargo?

- A. A and below
- B. B and below
- C. C and below
- D. D and E only

Correct answer: D

30. The boom stops on a pedestal crane prevent the boom from \_\_\_\_\_.

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

Correct answer: A

31. Fire hose stations shall be marked in red letters and figures such as Fire Station No. "1", "2", "3", etc. Which is the minimum height of the letters and figures required by regulation?

- A. 1/2 inch
- B. 1 inch
- C. 1-1/2 inches
- D. 2 inches

Correct answer: D

32. Your vessel has grounded on a bar. What should you do?

- A. Run the engine full astern to keep from being set further onto the bar.
- B. If you cannot get clear immediately, lighten the ship by pumping all ballast overboard.
- C. Switch to the high suction for condenser circulating water, if it is submerged.
- D. All of the above

Correct answer: C

33. Which is the most effective extinguishing action of dry chemical extinguisher?

- A. Breaking the chain reaction
- B. Shielding of radiant heat
- C. The CO<sub>2</sub> that is formed by heat
- D. Smothering

Correct answer: A

34. In the illustration D041DG below, what does symbol 3 represent?

- A. Displacement
- B. Forward perpendicular
- C. Baseline
- D. Amidships

Correct answer: D

35. Which corrector will compensate for the deviation which is maximum on intercardinal compass headings?

- A. Transverse magnets
- B. Flinders bar
- C. Quadrantal spheres
- D. Fore-and-aft magnets

Correct answer: C

36. What is the purpose of a striking plate?

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

Correct answer: A



37. Which term is given to the difference between the starboard and port drafts caused by shifting a weight transversely in the vessel?

- A. Trim
- B. List
- C. Heel
- D. Flotation

Correct answer: B

38. Topside icing that blocks freeing ports and scuppers \_\_\_\_\_.

- A. may decrease stability by increasing free surface effect due to water on deck
- B. is usually below the center of gravity and has little effect on stability
- C. increases the effective freeboard and increases the wind-heel affect
- D. will cause water on deck to pocket and increase stability

Correct answer: A

39. Magnets in the binnacles of magnetic compasses are used to reduce which effect?

- A. Deviation
- B. Local attraction
- C. Variation
- D. Static build-up

Correct answer: A

40. What is the mechanical advantage of tackle number 1 as shown in illustration D029DG below?

- A. 2.0
- B. 1.5
- C. 1.0
- D. 0.5

Correct answer: C

41. The wire rope used for cargo handling on board your vessel has a safe working load of eight tons. It shall be able to withstand a breaking test load of \_\_\_\_\_.

- A. 32 tons
- B. 40 tons
- C. 48 tons
- D. 64 tons

Correct answer: B

42. If a firefighting situation calls for low-velocity fog which action would you take?

- A. Attach a low-velocity fog applicator with the nozzle shut down
- B. Pull the lever on an all-purpose fire nozzle all the way back
- C. Order the engine room to reduce pressure on the fire pump
- D. Push the lever on an all-purpose fire nozzle all the way forward

Correct answer: A

43. Each distress signal and self-activated smoke signal must be replaced not later than the marked date of expiration, or not more than how many months from the date of manufacture?
- A. 48 months
  - B. 42 months
  - C. 36 months
  - D. 30 months

Correct answer: B

44. On an inspected vessel, which abbreviation refers to the horizontal distance between perpendiculars taken at the forward-most and the after-most points on the waterline at her deepest operating draft?
- A. LOA
  - B. LWL
  - C. LBP
  - D. LLL

Correct answer: C

45. Where are the grab rails of a metal lifeboat normally located?
- A. At the bow and at the stern
  - B. Near the top of the gunwale
  - C. Along each side of the keel
  - D. Along the turn of the bilge

Correct answer: D

46. What is the purpose of sheer in the construction of the vessel?
- A. To eliminate the need for margin plates
  - B. To allow the ship to ride waves with drier decks
  - C. To eliminate the need for butt straps
  - D. To give greater strength at the deck edge

Correct answer: B

47. The terms "ceiling" and "margin plate" are associated with which areas of the vessel?
- A. The main deck
  - B. The tank top
  - C. The crew's quarters
  - D. The engine room

Correct answer: B

48. Which agency assigns Load lines for U.S. vessels?
- A. The U.S. Coast Guard
  - B. The American Bureau of Shipping
  - C. The Lloyd's Register of Shipping
  - D. The National Cargo Bureau

Correct answer: B

49. What is the purpose of the hydrostatic release on an inflatable liferaft?

- A. To release the raft from the cradle automatically as the ship sinks
- B. To inflate the raft automatically
- C. To test the rafts hydrostatically
- D. None of the above

Correct answer: A

50. You are picking up a conscious person that has fallen overboard in one of the vessels motorboats. Recovery is easier in a light breeze if you approach from which direction?

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

Correct answer: B

51. Which of the signals listed is required to be displayed at night while bunkering at a dock?

- A. One red light over a white light
- B. One red light
- C. One red light over a yellow light
- D. Two red lights

Correct answer: B

52. The three conditions which cause engine shutdown are overspeed, low lube oil pressure, and which other condition?

- A. High jacket water pressure
- B. High lube oil pressure
- C. Low jacket water pressure
- D. High jacket water temperature

Correct answer: D

53. What are the only magnetic compass correctors that correct for both permanent and induced effects of magnetism?

- A. Fore-and-aft magnets
- B. Athwartships magnets
- C. Heeling magnets
- D. Quadrantal spheres

Correct answer: C

54. Under the Carriage of Goods by Sea Act of 1936, a vessel will be liable for damage to cargo when the damage arises out of which situation?

- A. The poor stowage of cargo in a container
- B. Overloading the vessel
- C. A fire caused by lightning
- D. Inherent vice

Correct answer: B

55. In continuous operation, what is the effective range of the 15 pound CO2 extinguisher?

- A. 2 to 4 feet
- B. 3 to 8 feet
- C. 9 to 12 feet
- D. 10 to 15 feet

Correct answer: B

56. Which meets the requirement of an independent backup system on an electric start survival craft?

- A. A hydraulic system
- B. A pneumatic system
- C. A backup system is not required
- D. A second rechargeable spare battery

Correct answer: D

57. Which is TRUE concerning a snatch block?

- A. The block is used only with manila rope
- B. It is a strong block used for short, sharp pulls
- C. It is a hinged block
- D. It is a chock roller

Correct answer: C

58. Which defines the process of cargo segregation?

- A. Listing the cargoes in order of their flammability
- B. The separating of cargoes so that the inherent characteristics of one cannot damage the other
- C. The separating of cargoes by final destination and block stowing to avoid overcarriage
- D. To classifying cargoes according to their toxicity

Correct answer: B

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

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

Correct answer: C

60. If a vessel takes a sudden, severe list or trim from an unknown cause, which action should you take FIRST?

- A. Assume the shift is due to off-center loading
- B. Determine the cause before taking countermeasures
- C. Assume the cause is environmental forces
- D. Counterflood

Correct answer: B

61. Why should foam be banked off a bulkhead when extinguishing an oil fire?

- A. To prevent agitation of the oil and spreading the fire
- B. To prevent any oil on the bulkheads from igniting
- C. To cool the bulkhead closest to the fire
- D. To coat the surrounding bulkheads with foam in case the fire spreads

Correct answer: A

62. In which location are lifejackets required to be stowed?

- A. In the pumproom
- B. Readily accessible spaces
- C. In the forepeaks
- D. Locked watertight containers

Correct answer: B

63. Which statement is TRUE concerning CO<sub>2</sub> cylinders which protect the small space in which they are stored?

- A. The cylinders shall have an audible alarm
- B. The cylinder shall be automatically operated by a heat actuator
- C. The cylinders can NOT contain more than 200 pounds of CO<sub>2</sub>
- D. All of the above

Correct answer: B

64. In a water-tube marine type boiler, after the steam leaves the generating tubes, in what part of the boiler is temperature of the steam increased?

- A. Superheater
- B. Firebox
- C. Mud drum
- D. Economizer

Correct answer: A

65. In illustration D033DG below, what is the joint indicated by letter D?

- A. A seam
- B. A span
- C. A sheet line
- D. A butt

Correct answer: D

66. What is the gyrocompass error resulting from your vessel's movement in OTHER than an east-west direction?

- A. Speed error
- B. Damping error
- C. Ballistic deflection
- D. Quadrantal error

Correct answer: A

67. When anchoring in a clay bottom, what is one hazard that may cause the anchor to drag?

- A. The flukes may dig in unevenly and capsize the anchor when under stress.
- B. The anchor may get shod with clay and not develop full holding power.
- C. The flukes may not dig in.
- D. The anchor will tend to dig in and come to rest near the vertical.

Correct answer: B

68. On every vessel, where must distress signals be stowed?

- A. In an enclosed space below the freeboard deck away from heat
- B. Above the freeboard deck away from heat
- C. On or near the navigating bridge
- D. On the flying bridge not closer than 15 feet to any bulkhead

Correct answer: C

69. You are proceeding to a distress site and expect large numbers of people in the water. Which statement is TRUE?

- A. If the survivors are in inflatable rafts you should approach from windward to create a lee for the survivors.
- B. You should stop to windward of the survivors in the water and only use the ship's boats to recover the survivors.
- C. Survivors in the water should never be permitted alongside due to the possibility of injury from the vessel.
- D. An inflatable liferaft secured alongside can be an effective boarding station for transfer of survivors from the boats.

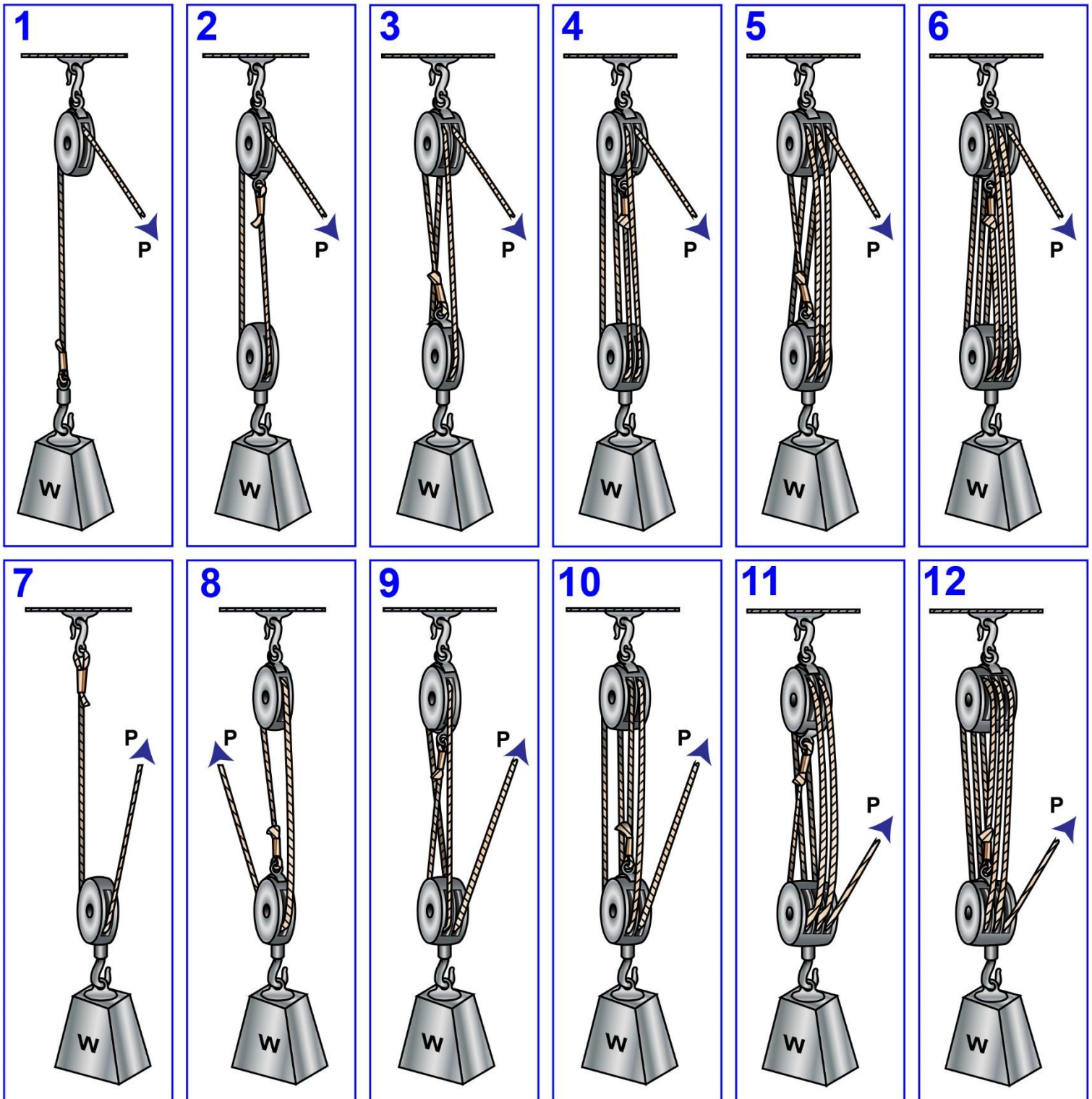
Correct answer: D

70. Progressive flooding is controlled by securing watertight boundaries and which other action?

- A. Jettisoning cargo
- B. Transferring water ballast
- C. Plugging holes or openings
- D. Abandoning ship

Correct answer: C

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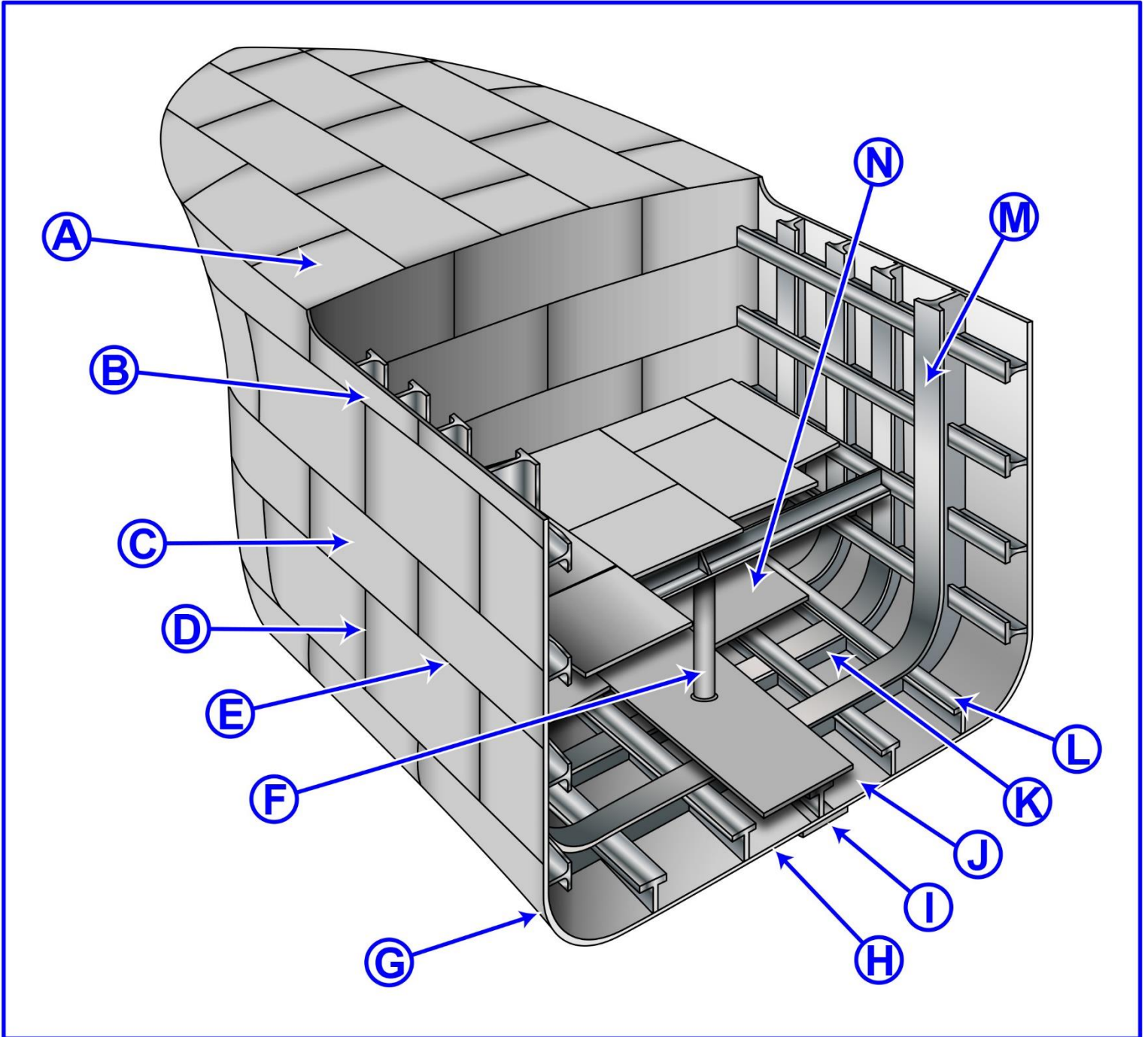


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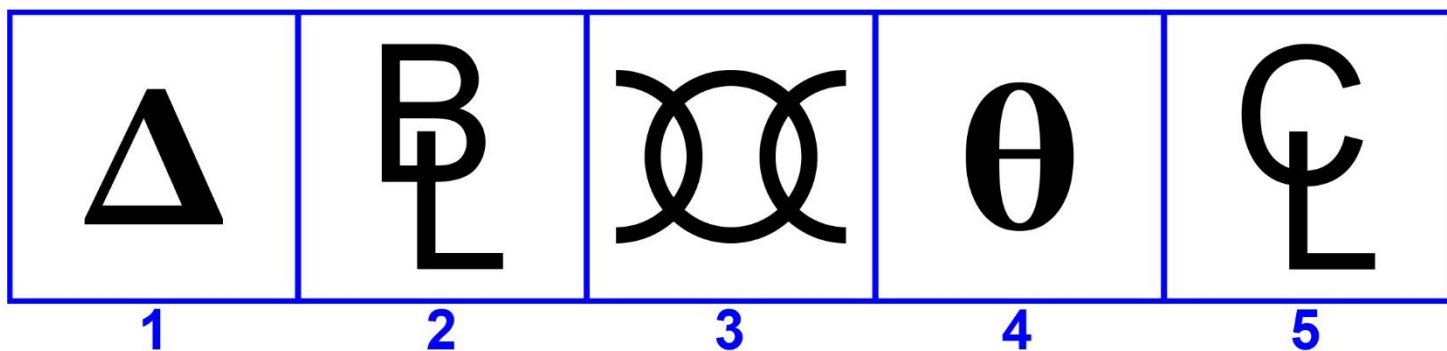


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