

U.S.C.G. Merchant Marine Exam

Master or Mate Less than 200 Gross Registered Tons Rivers

Q397 Navigation General – Rivers

(Sample Examination)

Choose the best answer to the following Multiple-Choice Questions.

1. The dry bulb temperature is 78oF and the wet bulb temperature is 62oF. What is the relative humidity?
- A. 16%
 - B. 24%
 - C. 39%
 - D. 79%

Correct answer: C

2. What does a Doppler log in the bottom return mode indicate?
- A. The velocity of the current
 - B. The speed over the ground
 - C. The depth of the water
 - D. The bottom characteristics

Correct answer: B

3. Which type of cloud is the classic "thunderhead"?
- A. Cirrus
 - B. Stratus
 - C. Cumulonimbus
 - D. Altostratus

Correct answer: C

4. On a working copy of a weather map, a cold front is represented by what color line?
- A. Blue
 - B. Red
 - C. Alternating red and blue
 - D. Purple

Correct answer: A

5. In the U.S. Aids to Navigation System on the Western Rivers, a preferred channel buoy to be left to port while proceeding downstream will _____.
- A. have a characteristic of composite group flashing if lighted
 - B. have the upper band red
 - C. show a red light if lighted
 - D. All of the above

Correct answer: D

6. Your vessel is on course 270°T, speed 10 knots. The apparent wind is from 10° off the port bow, speed 30 knots. From which direction is the true wind?
- A. 075°T
 - B. 165°T
 - C. 345°T
 - D. 255°T

Correct answer: D

7. A mountain peak charted at 700 feet breaks the horizon, and your height of eye is 12 feet. What is your approximate distance off (choose closest answer)?
- A. 34.7nm
 - B. 40.3nm
 - C. 55.3nm
 - D. 61.6nm

Correct answer: A

8. While proceeding downriver, you sight a red triangular-shaped daymark on the left bank. What does this daymark represent under the U.S. Aids to Navigation System on the Western Rivers?
- A. It has no lateral significance
 - B. It is a special purpose signal
 - C. It is a crossing daymark
 - D. It is a passing daymark

Correct answer: D

9. If your vessel were proceeding down river (descending), what would a green square marker with a green reflector border on the right bank indicate?
- A. A dredging mark
 - B. It is a mile board
 - C. A passing daybeacon
 - D. A crossing daymark

Correct answer: C

10. When a buoy is in position only during a certain period of the year, where may the dates when the buoy is in position be found?
- A. On the chart
 - B. Coast Pilot
 - C. Light List
 - D. Notice to Mariners

Correct answer: C

11. Fog generally clears when the _____.

- A. wind speed increases
- B. wind direction changes
- C. temperature increases
- D. All of the above

Correct answer: D

12. When utilizing a Pacific Coast chart, which is the reference plane of soundings?

- A. Mean low water springs
- B. Mean lower low water
- C. Lowest normal low water
- D. Mean lowest water

Correct answer: B

13. Under the U.S. Aids to Navigation System on the Western Rivers, which is TRUE of a daymark on the right descending bank?

- A. It will have an odd number
- B. It will indicate the gage reading
- C. Must contain yellow retro-reflective markings
- D. It shall be green in color

Correct answer: D

14. Which topmark shown in illustration D023NG below identifies an isolated danger?

- A. A
- B. B
- C. C
- D. D

Correct answer: B

15. Which is TRUE of echo-sounders?

- A. They measure the average depth of water to soft bottom
- B. They measure the actual depth of water
- C. They measure the actual depth of water below keel
- D. They measure the average depth from waterline to hard bottom

Correct answer: C

16. Under the U.S. Aids to Navigation System, which category is a yellow buoy?

- A. A safe water buoy
- B. A junction buoy
- C. A cardinal mark
- D. A special mark

Correct answer: D

17. Which instrument is designed to maintain a continuous record of atmospheric pressure?

- A. An aneroid barometer
- B. A barograph
- C. A thermograph
- D. A mercurial barometer

Correct answer: B

18. Which navigational mark may only be lettered?

- A. A red buoy
- B. A port side day-shape
- C. An unlighted, green, can buoy
- D. A spherical buoy

Correct answer: D

19. In the Northern Hemisphere, when the center of a high-pressure system is due east of your position, you can expect winds from which direction?

- A. North to east
- B. South to west
- C. North to west
- D. South to east

Correct answer: D

20. To find the specific phase characteristic of a lighthouse on a sound of the United States you would use which reference?

- A. American Practical Navigator
- B. Light List
- C. Nautical Chart Catalog
- D. U.S. Coast Pilot

Correct answer: B

21. The Light List indicates that a light has a nominal range of 14 miles and is 42 feet high (12.8 meters). If the visibility is 6 miles and your height of eye is 20 feet (6.1 meters), at what approximate distance will you sight the light?

- A. 20.1 miles
- B. 10.0 miles
- C. 7.6 miles
- D. 6.0 miles

Correct answer: B

22. The most dangerous form of icing encountered at sea is formed by which of the following?

- A. Hail
- B. Freezing rain
- C. Sea spray
- D. Rime

Correct answer: C

23. Temperature and moisture characteristics are modified in a warm or cold air mass due to which factor?

- A. Pressure changes in the air mass
- B. The heterogeneous nature of the air mass
- C. Upper-level atmospheric changes
- D. Movement of the air mass

Correct answer: D

24. You are steaming southward along the west coast of the United States when you encounter a buoy showing a flashing red light. Which is TRUE concerning the buoy?

- A. The buoy should be left on the vessel's port side
- B. The buoy should be left on the vessel's starboard side
- C. The buoy can remain on either side close aboard
- D. The buoy can be on either side well clear

Correct answer: A

25. A current moving across a lock entrance toward the river or toward the dam is known by which term?

- A. Cutoff
- B. Outdraft
- C. Springpool
- D. Lockwash

Correct answer: B

26. You are approaching an open drawbridge and sound the proper signal. You receive no acknowledgment from the bridge. Which action should you take?

- A. Resound the opening signal and do not pass through the bridge until signals have been exchanged.
- B. Approach with caution and proceed through the open draw.
- C. Hold in the channel as a vessel is closing the bridge from the other direction.
- D. Approach under full control to a position no closer than 400 yards from the bridge and await a signal from the bridge.

Correct answer: B

27. Under the U.S. Aids to Navigation System on the Western Rivers, what color are the buoys marking the starboard side of the channel when going upstream?

- A. Red
- B. Green
- C. Black
- D. Yellow

Correct answer: A

28. The navigation regulations applicable to a U.S. inland waterway can be found in which publication?

- A. Sailing Directions
- B. Coast Pilots
- C. Channel Reports
- D. Notices to Mariners

Correct answer: B

29. How can Northern Right Whales be identified?

- A. "V" shaped blow easily visible from ahead or behind
- B. Whitish patches of skin on top of the head
- C. No dorsal fin on the back
- D. All of the above

Correct answer: D

30. Red lights may appear on which buoys?

- A. Yellow buoys
- B. Vertically striped buoys
- C. Spherical buoys
- D. Horizontally banded buoys

Correct answer: D

31. The buoy symbol printed on your chart is leaning to the northeast. What does this indicate?

- A. You should stay to the north or east of the buoy
- B. Nothing special for navigational purposes
- C. You should stay to the west or south of the buoy
- D. The buoy is a major lighted buoy

Correct answer: B

32. Which term defines a submerged dike extending from the bank of the river used to train the channel?

- A. A towhead
- B. A cutoff
- C. A wingdam
- D. A landwall

Correct answer: C

33. As your vessel is heading southward along the east coast of the United States, you encounter a buoy showing a red flashing light. How should you pass this buoy?

- A. Pass it well clear on either side
- B. Leave it to your port
- C. Leave it to your starboard
- D. Pass it about 50 yards off on either side

Correct answer: C

34. Which of the following compensates for errors introduced when a vessel heels over?

- A. Magnets placed in trays inside the binnacle
- B. The Flinders bar
- C. A single vertical magnet beneath the compass
- D. The soft iron spheres on the arms of the binnacle

Correct answer: C

35. What is the standard atmospheric pressure in millibars?

- A. 760.0
- B. 938.9
- C. 1000.0
- D. 1013.2

Correct answer: D

36. What is magnetic dip a measurement of?

- A. The angle between the horizontal and the magnetic line of force
- B. The angle between the geographic pole and the magnetic pole
- C. The angle between the compass heading and the magnetic heading
- D. The angle between the lubber's line and true north

Correct answer: A

37. Determine the approximate geographic visibility of an object, with a height above the water of 85 feet (25.9 meters), for an observer with a height of eye of 60 feet (18.3 meters).

- A. 18.4nm
- B. 19.9nm
- C. 20.8nm
- D. 21.5nm

Correct answer: B

38. "Proceeding from seaward" for the purpose of the direction of buoying offshore, lateral system buoys would be proceeding _____.

- A. easterly on the Gulf Coast
- B. northerly on the Pacific Coast
- C. northerly on the Atlantic Coast
- D. None of the above

Correct answer: B

39. You are sailing south on the Intracoastal Waterway (ICW) when you sight a red nun buoy with a yellow square painted on it. Which statement is TRUE?
- A. You should leave the buoy to port.
 - B. ICW traffic should not proceed beyond the buoy unless the crossing waterway is clear of all traffic.
 - C. The waterway in that area has shoaled and the available depth of water is less than the project depth.
 - D. The buoy is off station and should be ignored as a navigational mark.

Correct answer: A

40. Which term is used to describe a structure, usually made of stone, or cement pilings, which extends from the bank at approximately right angles to the current?
- A. Revetment
 - B. Crib
 - C. Dike
 - D. Cutoff

Correct answer: C

41. While passing through Memphis, the weather report on the TV news indicates that a cold front is crossing western Kentucky and Tennessee. Tomorrow's weather will be dominated by a high-pressure area. What weather should you expect tomorrow?
- A. Light, southerly winds; high humidity and possibly fog
 - B. Moderate winds from the northwest, clear visibility and cooler temperatures
 - C. Scattered clouds with light, southeasterly winds; high humidity and possible fog
 - D. Low overcast; mild temperatures with light, steady rain or drizzle

Correct answer: B

42. In the U.S. Aids to Navigation System on the Western Rivers, the light characteristic of group flashing (2) is used for which purpose?
- A. To mark the left descending bank
 - B. To mark the right descending bank
 - C. To indicate the preferred channel
 - D. To indicate daymarks with no lateral significant

Correct answer: A

43. Under the IALA Buoyage Systems, which is TRUE of the topmark of a red and white vertically-striped buoy?
- A. It shall be two black spheres
 - B. It shall be a single red sphere
 - C. It shall be X-shaped
 - D. It shall be a single red cone

Correct answer: B

44. What does a white buoy with a blue band signify?

- A. A hydrographic data collection buoy
- B. Marking a restricted area
- C. An isolated danger mark
- D. A mooring buoy

Correct answer: D

45. Advection fog is most commonly caused by _____.

- A. air being warmed above the dew point
- B. a rapid cooling of the air near the surface of the Earth at night
- C. saturation of cold air by rain
- D. warm moist air being blown over a colder surface

Correct answer: D

46. Which defines a bold reef?

- A. A shallow reef
- B. A reef that is perpendicular to the current
- C. A steep and prominent sandbar
- D. A man-made reef extending above the water

Correct answer: C

47. Which information is found in the chart title?

- A. Survey information
- B. Edition date
- C. Number of the chart
- D. Variation information

Correct answer: A

48. On the Mississippi and Ohio Rivers, there is a special type of fog known as steam fog. What conditions cause this fog?

- A. Warm air passing over much colder water
- B. Rain coming out of a warm air mass aloft
- C. A rapid cooling of the ground on a clear night
- D. Cold air passing over much warmer water

Correct answer: D

49. Which of the symbols shown in illustration D018NG below represents an occluded front?

- A. A
- B. B
- C. C
- D. D

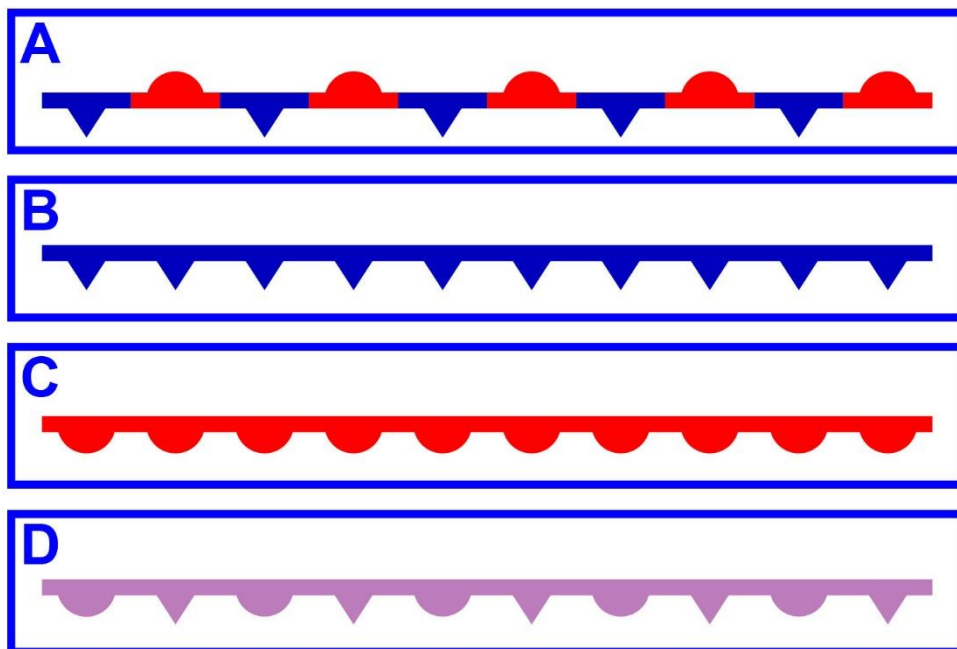
Correct answer: D

50. An orange and white buoy marking an area where operating restrictions are in effect will be marked with which symbol?

- A. Rectangle
- B. Circle
- C. Diamond with a cross
- D. Open-faced diamond

Correct answer: B

D018NG



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An Epitome of Navigation, 2002 Bicentennial Edition
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