

U.S.C.G. Merchant Marine Exam
Master Less than 100 Gross Registered Tons Rivers
Q402 Navigation General – Rivers
(Sample Examination)

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

1. 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. Scattered clouds with light, southeasterly winds, high humidity and possible fog
 - C. Moderate winds from the northwest, clear visibility and cooler temperatures
 - D. Low overcast; mild temperatures with light, steady rain or drizzle

Correct answer: C

2. Which condition(s) is(are) necessary for the formation of dew?
- A. Moderate winds
 - B. Clear skies
 - C. Available nuclei in the air
 - D. A surface warmer than the dew point of the air

Correct answer: B

3. Which is TRUE concerning privately maintained aids to navigation included in the Light List?
- A. They must be conspicuously marked by a signboard with the words "PRIVATE AID"
 - B. They are painted white and must use a white light if lighted
 - C. Not permitted in or along first-class waterways and may be authorized for second- and third-class waterways
 - D. They must conform to the standards of the U.S. Aids to Navigation System

Correct answer: D

4. Under the U.S. Aids to Navigation System used on the Western Rivers, which is TRUE of the aids to navigation lights on the right descending bank?
- A. They are white or green lights
 - B. They can only be green lights
 - C. They are white or red lights
 - D. They can only be white lights

Correct answer: A

5. Which buoy may be odd numbered?
- A. A spherical buoy
 - B. A red buoy
 - C. A yellow buoy
 - D. An unlighted can buoy

Correct answer: D

6. What is the light phase characteristic of a lighted isolated-danger mark?

- A. Very quick flashing
- B. Interrupted quick flashing
- C. Group flashing
- D. Long flashing

Correct answer: C

7. What can be expected with the presence of stratus clouds and a dying wind?

- A. Heavy snow
- B. Heavy rain
- C. Clearing skies
- D. Thick fog

Correct answer: D

8. When using an echo sounder in deep water, it is NOT unusual to encounter which situation?

- A. Receiving a strong return at about 200 fathoms (366 meters) during the day, and one nearer the surface at night
- B. Receiving a first return near the surface during the day, and a strong return at about 200 fathoms (366 meters) at night
- C. Receiving false echoes at a constant depth day and night
- D. To have to recalibrate every couple of days due to inaccurate readings

Correct answer: A

9. Which term is given to a light that has a light period shorter than its dark period?

- A. Occulting
- B. Flashing
- C. Alternating
- D. Pulsating

Correct answer: B

10. In which publication could you find information concerning the minimum lighting required for bridges on U.S. waters?

- A. Chart No. 1.
- B. Notice to Mariners
- C. Mississippi River Systems Light List
- D. Code of Federal Regulations

Correct answer: D

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

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

Correct answer: D

12. Which is TRUE of the direction of flow (channel) on the Corps of Engineer's Navigation Maps?

- A. The direction of flow (channel) is indicated by a broken line
- B. The direction of flow (channel) is always midway between the banks
- C. The direction of flow (channel) is indicated by depths (in feet)
- D. The direction of flow (channel) is not indicated

Correct answer: A

13. 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 indicate daymarks with no lateral significant
- B. To mark the left descending bank
- C. To mark the right descending bank
- D. To indicate the preferred channel

Correct answer: B

14. An air mass that has moved down from Canada would most likely have which symbols?

- A. cPk
- B. cTw
- C. mTk
- D. cTk

Correct answer: A

15. Which frontal system occurs when a cold air mass and a warm air mass meet, and there is no horizontal motion of either air mass?

- A. A cold front
- B. A stationary front
- C. A warm front
- D. An occluded front

Correct answer: B

16. Which would influence a magnetic compass?

- A. Radio
- B. Iron pipe
- C. Electrical wiring
- D. All of the above

Correct answer: D

17. What does the shoreline on charts generally represent?

- A. The mean low-water line
- B. The mean tide level
- C. The mean low-water spring line
- D. The mean high-water line

Correct answer: D

18. 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 is a crossing daymark
- B. It is a passing daymark
- C. It is a special purpose signal
- D. It has no lateral significance

Correct answer: B

19. Which is TRUE as the temperature of an air mass decreases?

- A. The relative humidity increases
- B. The specific humidity decreases
- C. The absolute humidity decreases
- D. The dew point rises

Correct answer: A

20. Deviation in a compass is caused by which of the following?

- A. The influence of the magnetic materials of the vessel
- B. The vessel's geographic position
- C. The vessel's heading
- D. The earth's magnetic field

Correct answer: A

21. What color lights do lighted information markers display?

- A. White lights
- B. Green lights
- C. Yellow lights
- D. Red lights

Correct answer: A

22. Which characteristic and color will a preferred-channel buoy show?

- A. A white light whose characteristic is Morse (A)
- B. A group-occulting white light
- C. A composite group-flashing (2 + 1) red or green light
- D. A composite group-flashing (2 + 1) white light

Correct answer: C

23. When does a Doppler speed log indicate speed over ground?

- A. At all times
- B. When sensing the bottom in depths of less than 600 feet
- C. When the unit is in the volume reverberation mode
- D. The unit can only sense speed over ground when there is no current

Correct answer: B

24. To avoid error, how should you read the scale of an aneroid barometer?

- A. With your eye to the left of the pointer
- B. With your eye directly in front of the pointer
- C. With your eye slightly above the meniscus
- D. With your eye to the right of the pointer

Correct answer: B

25. Vessels should maintain a sharp lookout, especially during December through March, when navigating the Northern Right Whale's only known calving grounds. Where are the calving grounds located?

- A. Nova Scotia
- B. Maine and Massachusetts
- C. Georgia and NE Florida
- D. California and Mexico

Correct answer: C

26. When a dual-purpose marking is used, how should the mariner following the Intracoastal Waterway be guided?

- A. By the shape of the yellow mark
- B. By the shape of the aid
- C. By the color of the top band
- D. By the color of the aid

Correct answer: A

27. How is the intensity of a light expressed in the Light Lists?

- A. Geographic range
- B. Nominal range
- C. Luminous range
- D. Meteorological range

Correct answer: B

28. A ship is on course 195° at a speed of 15 knots. The apparent wind is from 40° on the port bow, speed 30 knots. What are the direction and speed of the true wind?

- A. 068°T, 30 knots
- B. 127°T, 21 knots
- C. 263°T, 42 knots
- D. 292°T, 42 knots

Correct answer: B

29. Which statement is TRUE for an unlighted, red and green, horizontally-banded buoy with the topmost band red?

- A. They are cylindrical in shape and called can buoys
- B. They are conical in shape and called nun buoys
- C. They are triangular in shape to indicate that it may not be possible to pass on either side of the buoy
- D. They may either be cylindrical or conical since the shape has no significance

Correct answer: B

30. When approaching a lock entrance, which flashing light is the visual signal displayed when a single lock is ready for entrance?

- A. A red light
- B. A green light
- C. A white light
- D. An amber light

Correct answer: B

31. Fog forms when which condition exists?

- A. When the air is 90% water saturated
- B. When the air temperature is greater than the dew point temperature
- C. When the air is 50% water saturated
- D. When the air temperature is equal to, or below the dew point temperature

Correct answer: D

32. The Coast Guard Captain of the Port has excluded all traffic from a section of a port, while a regatta is taking place. Which describes the buoys marking this exclusion area?

- A. An orange and white can
- B. Marked with a spherical topmark
- C. A yellow can
- D. A nun- or can-shaped to conform to the overall direction of navigation

Correct answer: A

33. Which is TRUE of a bluff bar?

- A. Bluff bars tend to give a false indication of its position
- B. It is a bar extending out from a bluff alongside the river
- C. A bluff bar is perpendicular to the current
- D. A bluff bar has a sharp drop off into deep water

Correct answer: D

34. You are ascending a river and exchanging navigational information via radiotelephone with a descending vessel. If the descending vessel advises you to "watch for the set" above point X, what would you expect to encounter above point X?

- A. Shallow water
- B. Slack water
- C. A sideways movement of your vessel
- D. An increase in current velocity

Correct answer: C

35. Under the U.S. Aids to Navigation System on the Western Rivers, which is TRUE of a preferred channel buoy?

- A. It shall be solid green
- B. It shall be solid red
- C. It shall be horizontally-banded red and green
- D. It shall be vertically-striped red and white

Correct answer: C

36. How is an occluded front represented on a weather map?

- A. A purple line
- B. A dashed blue line
- C. An alternate red and blue line
- D. A blue line

Correct answer: A

37. Which defines the controlling depth of the river?

- A. The edge of a dredged channel
- B. The highest level to which the river may rise without flooding
- C. The minimum depth of the river prescribed in the channel maintenance program
- D. The least available water in a channel which limits the draft of boats and tows

Correct answer: D

38. Under the U.S. Aids to Navigation System, what does a lighted buoy with a spherical topmark mark indicate?

- A. The position of underwater cables
- B. A hazard to navigation
- C. The port side of the channel
- D. Safe water

Correct answer: D

39. You are in a channel inbound from sea. A daymark used to mark a channel junction when the preferred channel is to starboard will have the shape indicated by what letter in illustration D045NG below?

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

Correct answer: A

40. Which general weather conditions should you expect to find in a low-pressure system?

- A. Precipitation and cloudiness
- B. Gradual clearing and cooler temperatures
- C. Scattered clouds at high elevations
- D. Fair weather

Correct answer: A

41. The Light List shows a lighted aid to navigation on the right bank. In which situation can the light be seen on the port side of a vessel?

- A. When the vessel is crossing the river
- B. When the vessel is ascending the river
- C. When the vessel is proceeding towards sea
- D. When the vessel is descending the river

Correct answer: B

42. Which statement concerning the chartlet seen in illustration D010NG below is TRUE? (Soundings and heights are in meters)

- A. There is a dangerous eddy southeast of Beito Island.
- B. Maury lightship is visible for 17 miles.
- C. The bottom to the south-southeast of the lightship is soft coral.
- D. There is a 12-meter-deep hole west of Beito Island and inside the 5-meter line.

Correct answer: A

43. The place where a channel moves from along one bank of the river over to the other bank of the river is known by which term?

- A. Draft
- B. Crossing
- C. Cutoff
- D. Draw

Correct answer: B

44. The Light List indicates that a dayboard is a type KGW. You should take which action?

- A. Leave it to port when southbound on the Atlantic Coast ICW
- B. Look for a green and white diamond
- C. Look for another daymark to form the range
- D. Pass it close aboard on either side

Correct answer: C

45. Yellow lights may appear on which buoys?

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

Correct answer: D

46. Which light signal indicates that you may approach the lock?

- A. Flashing red
- B. Steady amber
- C. Flashing amber
- D. Steady green

Correct answer: C

47. Which buoy may be odd numbered?

- A. Unlighted nun buoy
- B. Lighted green buoy
- C. Mid-channel buoy
- D. All of the above

Correct answer: B

48. If you observe a rapid fall of barometric pressure, which action should you take?

- A. Contact the NWS or a local radio station
- B. Call the Coast Guard to verify the change
- C. Know that the barometer is not working properly
- D. Prepare for an onset of stormy weather with strong winds

Correct answer: D

49. Which is TRUE as the temperature of the air reaches the dew point?

- A. Water freezes
- B. It begins to snow
- C. Fog may form
- D. Rain must develop

Correct answer: C

50. 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 a single red cone
- D. It shall be X-shaped

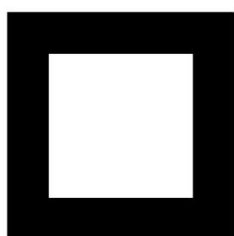
Correct answer: B

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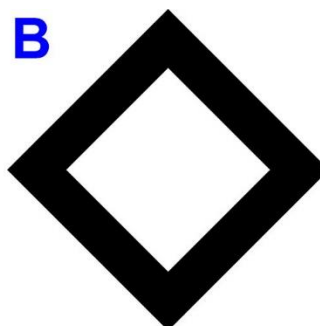


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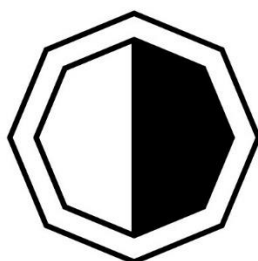
A



B



C



D

