

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. When cold air displaces warm air you have which type of front?

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

Correct answer: C

2. What daymark shape is used in the lateral system?

- A. Triangle
- B. Pentagon
- C. Diamond
- D. Semicircle

Correct answer: A

3. 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. Georgia and NE Florida
- C. California and Mexico
- D. Maine and Massachusetts

Correct answer: B

4. Which agency maintains federal aids to navigation?

- A. National Ocean Service
- B. Coast Guard
- C. Corps of Engineers
- D. Maritime Administration

Correct answer: B

5. What is the color scheme of navigational marks used for informational or regulatory purposes?

- A. Green and red horizontally-banded
- B. Solid yellow
- C. White with orange geometric shapes
- D. Red and white vertically-striped

Correct answer: C

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

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

Correct answer: B

7. You are outbound in a buoyed channel on course 015°T. You sight a white light showing a Morse (A) characteristic bearing 359° relative. For safety, which action should you take?

- A. Alter course to 000°T and leave the buoy close on the starboard side
- B. Stay in the channel and leave the buoy to port
- C. Change course to 359°T to pass near to the buoy
- D. Check the chart to see where the marked danger lies in relation to the buoy

Correct answer: B

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

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

Correct answer: A

9. Steam fog is most likely to occur on the Mississippi and Ohio Rivers in _____.

- A. spring, around late evening
- B. spring, around early evening
- C. fall, around midday
- D. summer, around early morning

Correct answer: D

10. Which is most commonly associated with fog?

- A. An anticyclone
- B. A low-pressure area
- C. A warm front at night
- D. A cold front in the spring

Correct answer: C

11. Which is a characteristic of a port side daymark?

- A. Of any shape
- B. Black and white
- C. Numbered
- D. Octagonal

Correct answer: C

12. Which wind results from a land mass cooling more quickly at night than an adjacent water area?

- A. Coastal breeze
- B. Sea breeze
- C. Mistral
- D. Land breeze

Correct answer: D

13. Barometers are calibrated at which standard temperature?

- A. 0°F
- B. 32°F
- C. 60°F
- D. 70°F

Correct answer: B

14. What does a Doppler log in the bottom return mode indicate?

- A. The speed over the ground
- B. The depth of the water
- C. The bottom characteristics
- D. The velocity of the current

Correct answer: A

15. White lights may be found on which buoys?

- A. Preferred channel buoys
- B. Information and regulatory buoys
- C. Numbered buoys
- D. Special purpose buoys

Correct answer: B

16. "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 Atlantic Coast
- C. northerly on the Pacific Coast
- D. None of the above

Correct answer: C

17. What should you apply to a fathometer reading to determine the depth of water?

- A. Subtract the sea water correction.
- B. Add the draft of the vessel.
- C. Add the sea water correction.
- D. Subtract the draft of the vessel.

Correct answer: B

18. 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. show a red light if lighted
- B. have the upper band red
- C. have a characteristic of composite group flashing if lighted
- D. All of the above

Correct answer: D

19. Which buoy may be odd numbered?

- A. A yellow buoy
- B. A red buoy
- C. An unlighted can buoy
- D. A spherical buoy

Correct answer: C

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

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

Correct answer: A

21. 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

22. In IALA Region B, entering from sea, how would a daymark on the port side of the channel be indicated on a chart?

- A. A green square with the letter G
- B. A red triangle with the letter R
- C. A white square with the letters GR
- D. A white triangle with the letters RG

Correct answer: A

23. At McAlpine L & D, normal upper pool elevation is 420.0 feet MSL, equal to 12.0 feet on the upper gage. The vertical clearance at the Clark Memorial Highway bridge is 72.6 feet above normal pool. What is the clearance if the gage reads 27.2 feet?

- A. 25.4 feet
- B. 57.4 feet
- C. 60.6 feet
- D. 72.6 feet

Correct answer: B

24. 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 white lights
- C. They are white or red lights
- D. They can only be green lights

Correct answer: A

25. How are aids to navigation marking the intracoastal waterway identified?

- A. Yellow stripes, squares, or triangles marked on them
- B. White retro-reflective material
- C. The letters ICW after the aid's number or letter
- D. The light characteristic and color for lighted aids

Correct answer: A

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

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

Correct answer: A

27. You are approaching a multiple-span bridge at night. How is the main navigational channel span indicated?

- A. A steady blue light in the center of the span
- B. Two flashing green lights in the center of the span
- C. A quick flashing red or green aid to navigation
- D. 3 white lights in a vertical line in the center of the span

Correct answer: D

28. On a working copy of a weather map what color is the line that represents a stationary front?

- A. Blue
- B. Alternating red and blue
- C. Red
- D. Purple

Correct answer: B

29. Yellow lights may appear on which buoys?

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

Correct answer: D

30. The shoreline shown on nautical charts of areas affected by large tidal fluctuations is usually the line of mean _____.

- A. tide level
- B. lower low water
- C. high water
- D. low water

Correct answer: C

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

Correct answer: B

32. The Light List indicates that a light has a nominal range of 14 miles and is 26 feet high. If the visibility is 14 miles and your height of eye is 20 feet, at which approximate distance will you sight the light?

- A. 7.5 miles
- B. 11.2 miles
- C. 14.0 miles
- D. 18.1 miles

Correct answer: B

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

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

Correct answer: B

34. Before a magnetic compass is adjusted certain correctors must be checked to ensure that they are free of permanent magnetism. Which are the correctors?

- A. Flinders bar and quadrantal spheres
- B. Dip needle and heeling magnet
- C. Fore-and-aft and athwartships magnets
- D. Heeling magnet and Flinders bar

Correct answer: A

35. A chart has extensive corrections to be made to it. When these are made and the chart is again printed, what term is given to this chart issue?

- A. New edition
- B. First edition
- C. Reprint
- D. Revised edition

Correct answer: A

36. Which is TRUE of Radiation fog?

- A. It always forms over water
- B. It dissipates during the evening
- C. It is formed by a temperature inversion
- D. It is thinnest at the surface

Correct answer: C

37. Which defines a bold reef?

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

Correct answer: D

38. What is the approximate geographic range of Point Judith Light, Rhode Island, if your height of eye is 62 feet (18.9 meters)? Refer to "Reprints from the LIGHT LISTS AND COAST PILOTS". (use charted range of 20 miles as nominal range)

- A. 9.6nm
- B. 16.5nm
- C. 18.6nm
- D. 20.7nm

Correct answer: C

39. Your vessel is leaving New York harbor in dense fog. As the vessel slowly proceeds toward sea, you sight a green can buoy on the starboard bow. Which action should you take?

- A. Pass the buoy close to, leaving it to your port.
- B. Stand on, leaving the buoy to your starboard.
- C. Stop and fix your position.
- D. Turn hard right to get back into the channel.

Correct answer: B

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

Correct answer: D

41. What feature(s) of a daymark is (are) used to identify the beacon upon which it is mounted?

- A. Size
- B. Method of construction
- C. Signal characteristics
- D. Color and shape

Correct answer: D

42. Which defines the controlling depth of the river?

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

Correct answer: A

43. In United States waters, a buoy having red and white vertical stripes if lighted, it will have which light characteristic?

- A. Group occulting
- B. Interrupted quick flashing
- C. Quick flashing
- D. Morse (A)

Correct answer: D

44. Which clouds are described as high clouds, composed of small white flakes or scaly globular masses, and often banded together to form a "mackerel sky"?

- A. Cirrocumulus
- B. Cirrus
- C. Altostratus
- D. Cumulonimbus

Correct answer: A

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

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

Correct answer: A

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

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

Correct answer: A

47. Which describes a deadhead?

- A. A buoy that is adrift
- B. A crew member who refuses to work
- C. The upstream end of a land wall
- D. A tree or log awash in a nearly vertical position

Correct answer: D

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

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

Correct answer: D

49. What is the standard atmospheric pressure as measured in inches of mercury?

- A. 29.92
- B. 500.0
- C. 760.0
- D. 1013.2

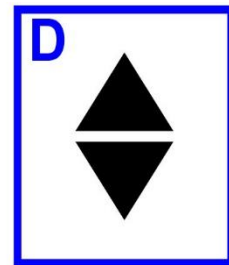
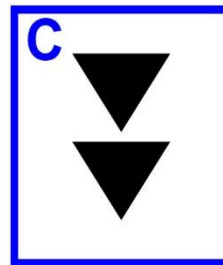
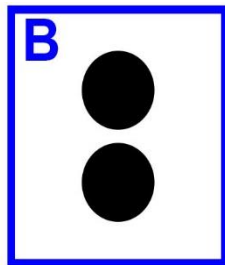
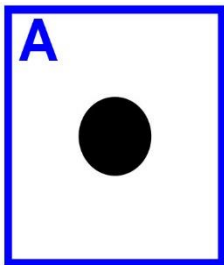
Correct answer: A

50. Which would you expect to see on a lighted preferred-channel buoy?

- A. A fixed red light
- B. A Morse (A) white light
- C. A composite group-flashing light
- D. A yellow light

Correct answer: C

D023NG



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