

## U.S.C.G. Merchant Marine Exam

Master or Mate Less than 200 Gross Registered Tons

Q397 Navigation General - Rivers

(Sample Examination)

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

1. When pushing barges ahead close to a steep revetment where there is no current, what is MOST likely to occur?

- (A) The head of the tow will tend to sheer away from the revetment.
- (B) The stern of the towboat will tend to sheer away from the revetment.
- (C) Your speed over the ground will increase.
- (D) All of the above

*If choice A is selected set score to 1.*

2. When reporting wind direction, you should give the direction in \_\_\_\_\_.

- (A) true degrees
- (B) isobaric degrees
- (C) magnetic compass degrees
- (D) relative degrees

*If choice A is selected set score to 1.*

3. Mean lower low water is the reference plane used for \_\_\_\_\_.

- (A) all vertical measurements
- (B) water depths on the U.S. east coast only
- (C) soundings on the U.S. east and west coasts
- (D) heights above water for lights, mountains, etc.

*If choice C is selected set score to 1.*

4. A special mark (yellow buoy), if lighted, may exhibit which light rhythm?

- (A) Morse "A"
- (B) Equal interval
- (C) Flashing
- (D) Occulting

*If choice C is selected set score to 1.*

5. The light characteristic of flashing is used in the Aids to Navigation System on the Western Rivers for lights on \_\_\_\_\_.

- (A) preferred channel buoys
- (B) the right descending bank
- (C) daymarks with no lateral significance
- (D) the left descending bank

*If choice B is selected set score to 1.*

6. The buoy symbol printed on your chart is leaning to the northeast. This indicates \_\_\_\_\_.

- (A) nothing special for navigational purposes
- (B) you should stay to the north or east of the buoy
- (C) the buoy is a major lighted buoy
- (D) you should stay to the west or south of the buoy

*If choice A is selected set score to 1.*

7. When a dual purpose marking is used, the mariner following the Intracoastal Waterway should be guided by the \_\_\_\_\_.

- (A) color of the top band
- (B) shape of the aid
- (C) color of the aid
- (D) shape of the yellow mark

*If choice D is selected set score to 1.*

8. Temperature and moisture characteristics are modified in a warm or cold air mass due to \_\_\_\_\_.

- (A) upper level atmospheric changes
- (B) the heterogeneous nature of the air mass
- (C) movement of the air mass
- (D) pressure changes in the air mass

*If choice C is selected set score to 1.*

9. A white buoy with an open-faced orange diamond on it indicates \_\_\_\_\_.

- (A) the buoy is a mooring buoy
- (B) operating restrictions are in effect
- (C) danger
- (D) vessels are excluded from the area

*If choice C is selected set score to 1.*

10. The light characteristic of composite group flashing (2 + 1) is used in the Aids to Navigation System on the Western Rivers for lights on \_\_\_\_\_.

- (A) daymarks with no lateral significance
- (B) preferred-channel buoys
- (C) the right descending bank
- (D) the left descending bank

*If choice B is selected set score to 1.*

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

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

*If choice D is selected set score to 1.*

**12.** A buoy marking a wreck will show a(n) \_\_\_\_\_.

- (A) white light FL (2) and a topmark of 2 black spheres
- (B) yellow light and will be numbered
- (C) continuous quick white light and may be numbered
- (D) occulting green light and may be lettered

*If choice A is selected set score to 1.*

**13.** In the U.S. Aids to Navigation System, red and green horizontally-banded buoys mark \_\_\_\_\_.

- (A) general anchorage areas
- (B) fishing grounds
- (C) junctions or bifurcations
- (D) channels for shallow draft vessels

*If choice C is selected set score to 1.*

**14.** Which buoy will NOT display white retro-reflective material?

- (A) Daymark of no lateral significance
- (B) Safe water mark
- (C) Preferred channel mark
- (D) Isolated danger mark

*If choice C is selected set score to 1.*

**15.** The type of fog that occurs on clear nights with very light breezes and forms when the earth cools rapidly?

- (A) convection fog
- (B) frontal fog
- (C) radiation fog
- (D) advection fog

*If choice C is selected set score to 1.*

**16.** You are steaming in a westerly direction along the Gulf Coast. You see ahead of you a lighted buoy showing a red isophase light. Which action should you take?

- (A) Alter course and leave the buoy nearby on either side.
- (B) Alter course and pass the buoy well-off on either side.
- (C) Alter course to port and leave the buoy to starboard.
- (D) Alter course to starboard and leave the buoy to port.

*If choice C is selected set score to 1.*

**17.** You are heading out to sea in a buoyed channel and see a quick-flashing green light on a buoy ahead of you. In U.S. waters, you should leave the buoy \_\_\_\_\_.

- (A) well clear on either side
- (B) to port
- (C) to starboard
- (D) about 50 yards off on either side

*If choice C is selected set score to 1.*

**18.** A vertically-striped buoy may be \_\_\_\_\_.

- (A) striped black and green
- (B) striped black and yellow
- (C) lighted with a white light
- (D) lighted with a red light

*If choice C is selected set score to 1.*

**19.** Under the IALA Buoyage System, which topmark shown in illustration D023Ng below will be displayed on a safe water mark?

- (A) A
- (B) B
- (C) C
- (D) D

*If choice A is selected set score to 1.*

**20.** Under the U.S. Aids to Navigation System on the Western Rivers, a preferred-channel buoy is \_\_\_\_\_.

- (A) solid red
- (B) solid green
- (C) horizontally-banded red and green
- (D) vertically-striped red and white

*If choice C is selected set score to 1.*

**21.** Port side daymarks may be \_\_\_\_\_.

- (A) black and white
- (B) numbered
- (C) of any shape
- (D) octagonal

*If choice B is selected set score to 1.*

**22.** Geographic range is the maximum distance at which a light may be seen under \_\_\_\_\_.

- (A) perfect visibility conditions, limited only by interference from background lighting
- (B) perfect visibility conditions, limited only by the curvature of the Earth
- (C) existing visibility conditions, limited only by the intensity of the light
- (D) existing visibility conditions, limited only by the curvature of the Earth

*If choice B is selected set score to 1.*

**23.** If your vessel were proceeding down river (descending), a green square marker with a green reflector border on the right bank would be a \_\_\_\_\_.

- (A) mile board
- (B) dredging mark
- (C) passing daymark
- (D) crossing daymark

*If choice C is selected set score to 1.*

**24.** The compass rose on a nautical chart indicates both variation and \_\_\_\_\_.

- (A) deviation
- (B) annual rate of variation change
- (C) compass error
- (D) precession

*If choice B is selected set score to 1.*

- 25.** You are approaching an open drawbridge and sound the proper signal. You receive no acknowledgment from the bridge. Which action should you take?
- (A) Hold in the channel as a vessel is closing the bridge from the other direction.
  - (B) Approach with caution and proceed through the open draw.
  - (C) Approach under full control to a position no closer than 400 yards from the bridge and await a signal from the bridge.
  - (D) Resound the opening signal and do not pass through the bridge until signals have been exchanged.

*If choice B is selected set score to 1.*

- 26.** While proceeding downriver (descending) you sight a red diamond-shaped panel with small, red reflector squares in each corner on the left bank. Under the U.S. Aids to Navigation System on the Western Rivers this is a \_\_\_\_\_.
- (A) passing daymark
  - (B) cable crossing
  - (C) crossing daymark
  - (D) special purpose signal

*If choice C is selected set score to 1.*

- 27.** The channel under a bridge is marked with lights of the lateral system. The centerline of the channel shall be marked on the bridge by \_\_\_\_\_.
- (A) a yellow light
  - (B) three fixed white lights
  - (C) an occulting white light
  - (D) a flashing blue light

*If choice C is selected set score to 1.*

- 28.** An occulting light is one in which \_\_\_\_\_.
- (A) the periods of light and darkness are equal
  - (B) the period of light exceeds the period of darkness
  - (C) the period of darkness exceeds the period of light
  - (D) there is only a partial eclipse of the light

*If choice B is selected set score to 1.*

**29.** In modern fathometers the sonic or ultrasonic sound waves are produced electrically by means of a(n) \_\_\_\_\_.

- (A) amplifier
- (B) transmitter
- (C) transceiver
- (D) transducer

*If choice D is selected set score to 1.*

**30.** What will NOT induce errors into a Doppler sonar log?

- (A) Roll
- (B) Change in trim
- (C) Pitch
- (D) Increased draft

*If choice D is selected set score to 1.*

**31.** The National Geospatial-Intelligence Agency (formerly the National Imagery and Mapping Agency) would produce a chart of the coast of \_\_\_\_\_.

- (A) Hawaii
- (B) Puerto Rico
- (C) Canada
- (D) Alaska

*If choice C is selected set score to 1.*

**32.** What agency of the U.S. Government issues charts of U.S. waters and Coast Pilots?

- (A) U.S. Naval Observatory
- (B) National Ocean Service
- (C) U.S. Coast Guard
- (D) National Imagery and Mapping Agency

*If choice B is selected set score to 1.*

**33.** The Light List Does NOT contain information on \_\_\_\_\_.

- (A) radio beacon systems
- (B) radio direction finder calibration stations
- (C) aeronautical lights useful for marine navigation
- (D) the Global Positioning System (GPS)

*If choice C is selected set score to 1.*

**34.** Which publication lists Class I and II private aids to navigation in or along navigable waters of the United States?

- (A) Light List
- (B) Sailing Directions
- (C) Aids to Navigation Manual
- (D) List of Private Aids

*If choice A is selected set score to 1.*

**35.** By convention, the Earth's south magnetic pole is colored \_\_\_\_\_.

- (A) red
- (B) blue
- (C) white
- (D) black

*If choice A is selected set score to 1.*

**36.** The total magnetic effects which cause deviation of a vessel's compass can be broken down into a series of components which are referred to as \_\_\_\_\_.

- (A) divisional parts
- (B) coefficients
- (C) equations
- (D) fractional parts

*If choice B is selected set score to 1.*

**37.** In many areas "atoll" clouds (clouds of vertical development) are produced over small islands. These are the result of \_\_\_\_\_.

- (A) warm air from the sea rising over higher land areas
- (B) descending air over the islands
- (C) rising air currents produced by the warm islands
- (D) cool land air mixing with warm sea air

*If choice C is selected set score to 1.*

**38.** When compared to air temperature, which factor is most useful in predicting fog?

- (A) Absolute humidity
- (B) Dew point
- (C) Barometric pressure
- (D) Vapor pressure

*If choice B is selected set score to 1.*

**39.** An occluded front is caused by a(n) \_\_\_\_\_.

- (A) low pressure area
- (B) high pressure area
- (C) cold front overtaking a warm front
- (D) area of calm air

*If choice C is selected set score to 1.*

**40.** On the approach of a warm front, barometric pressure usually \_\_\_\_\_.

- (A) is uncertain
- (B) rises
- (C) falls
- (D) is steady

*If choice C is selected set score to 1.*

**41.** Which of the following is NOT a form of precipitation?

- (A) sleet
- (B) frost
- (C) rain
- (D) snow

*If choice B is selected set score to 1.*

**42.** The wind circulation around a high pressure center in the Northern Hemisphere is \_\_\_\_\_.

- (A) counterclockwise and moving towards the high
- (B) counterclockwise and moving outward from the high
- (C) clockwise and moving towards the high
- (D) clockwise and moving outward from the high

*If choice D is selected set score to 1.*

**43.** Anticyclones are usually characterized by \_\_\_\_\_.

- (A) dry, fair weather
- (B) high winds and cloudiness
- (C) overcast skies
- (D) gustiness and continuous precipitation

*If choice A is selected set score to 1.*

**44.** As the temperature of an air mass decreases, the \_\_\_\_\_.

- (A) specific humidity decreases
- (B) relative humidity increases
- (C) absolute humidity decreases
- (D) dew point rises

*If choice B is selected set score to 1.*

**45.** While upbound through Memphis, the weather report on TV news indicates that a warm front is stationary over the Kentucky - Missouri - Tennessee areas. What weather conditions should you expect?

- (A) Southerly winds with steady rain; fog or overcast
- (B) Strong, gusting winds from the NW with thundershowers
- (C) Light winds from the northeast with clear skies
- (D) A "blue norther"

*If choice A is selected set score to 1.*

**46.** On the Mississippi and Ohio Rivers, there is a special type of fog known as steam fog. It is caused by \_\_\_\_\_.

- (A) a rapid cooling of the ground on a clear night
- (B) cold air passing over much warmer water
- (C) rain coming out of a warm air mass aloft
- (D) warm air passing over much colder water

*If choice B is selected set score to 1.*

**47.** A sling psychrometer is used to measure \_\_\_\_\_.

- (A) barometric pressure
- (B) engine temperature
- (C) dry bulb and wet bulb temperatures
- (D) seawater temperature

*If choice C is selected set score to 1.*

**48.** A backlash below a lock is defined as a \_\_\_\_\_.

- (A) an eddy working along the lower guide wall
- (B) current setting into the lock chamber
- (C) current setting counterclockwise
- (D) current setting your vessel on the wall

*If choice A is selected set score to 1.*

**49.** The "head of the bend" is the \_\_\_\_\_.

- (A) bottom or downstream beginning of a bend
- (B) top or upstream beginning of a bend
- (C) center line or apex of a bend
- (D) midpoint or center radius of a bend

*If choice B is selected set score to 1.*

**50.** The abbreviation L.W.R.P. on the navigation maps means \_\_\_\_\_.

- (A) low winter runoff point
- (B) low water reference plane
- (C) land wall reference point
- (D) least water river plane

*If choice B is selected set score to 1.*

## D023NG

