

U.S.C.G. Merchant Marine Exam
Apprentice Mate Steersman
Q412 Navigation General - Near Coastal
(Sample Examination)

Choose the best answer to the following Multiple Choice Questions.

1. Your dead reckoning position should be plotted _____.
- (A) at least every hour on the hour in the open waters of the sea
 - (B) whenever an estimated position is plotted
 - (C) when coming on or going off soundings
 - (D) when it agrees with your GPS position

If choice A is selected set score to 1.

2. Which installed equipment must be tested and logged when a new Master assumes command?
- (A) Vessel control alarms
 - (B) Navigational lights and search lights
 - (C) Internal communications, including sound-powered telephones
 - (D) All of the above must be tested

If choice D is selected set score to 1.

3. With respect to automatic identification systems (AIS), which information is required to be broadcast every 1 to 10 seconds?
- (A) Time stamp
 - (B) Location of antenna
 - (C) Destination
 - (D) None of the above

If choice A is selected set score to 1.

4. 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.

5. 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.

6. 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.

7. Complete information on weather broadcasts throughout the world is contained in _____.

- (A) the Notice to Mariners
- (B) Selected Worldwide Marine Weather Broadcasts
- (C) your local newspaper
- (D) the daily weather map

If choice B is selected set score to 1.

8. A tsunami is caused by a(n) _____.

- (A) tidal wave
- (B) earthquake on the ocean's floor
- (C) storm surge caused by a hurricane or tropical storm
- (D) tornado

If choice B is selected set score to 1.

9. Under the IALA cardinal system, a mark with quick white light showing 3 flashes every 10 seconds indicates that the safest water in the area is on the _____.

- (A) north side of the mark
- (B) east side of the mark
- (C) south side of the mark
- (D) west side of the mark

If choice B is selected set score to 1.

10. Distance along a track line is measured on a Mercator chart by using the _____.

- (A) latitude scale at the mid-latitude of the chart
- (B) longitude scale near the middle of the track line
- (C) latitude scale near the middle of the track line
- (D) latitude or longitude scale at the middle of the scale

If choice C is selected set score to 1.

11. 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.

12. 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.

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. 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.

- 15.** You are underway on course 120°T and can make 12 knots. The eye of a hurricane bears 150°T at 120 miles. The hurricane is on course 295° at 20 knots. What course should you steer at 12 knots to have the maximum CPA?
- (A) 330°
 - (B) 348°
 - (C) 312°
 - (D) 001°

If choice B 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.** 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.

- 18.** Which of the following traits possessed by an articulated light makes it superior to other types of buoys?
- (A) The fog horn signal travels farther to sea
 - (B) The radar reflectors return better signals
 - (C) It is equipped with strobe lights
 - (D) It has a reduced watch circle

If choice D is selected set score to 1.

19. 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.

20. 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.

21. The depth of water on a chart is indicated as 23 meters. This is equal to _____.

- (A) 11.5 fathoms
- (B) 12.6 fathoms
- (C) 69.0 feet
- (D) 78.6 feet

If choice B is selected set score to 1.

22. With respect to failure warnings and status indications, GPS receivers should provide, at a minimum, _____.

- (A) a cross-track error alarm
- (B) an alarm if engine speed is suddenly reduced
- (C) a warning of loss of position
- (D) an indication of a change in satellite configuration

If choice C is selected set score to 1.

23. 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.

24. You have another ship overtaking you close aboard to starboard. You have 3 radar targets bearing 090° relative at ranges of .5 mile, 1 mile, and 1.5 miles. In this case, the unwanted echoes are called _____.

- (A) multiple echoes
- (B) spoking
- (C) indirect echoes
- (D) side-lobe echoes

If choice A is selected set score to 1.

25. What publication contains information about the port facilities in Cadiz, Spain?

- (A) Sailing Directions
- (B) World Port Index
- (C) Nautical Index
- (D) United States Coast Pilot

If choice B is selected set score to 1.

26. 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.

27. Charts should be corrected by using information published in the _____.

- (A) Notice to Mariners
- (B) Light List
- (C) American Practical Navigator
- (D) Coast Pilot

If choice A is selected set score to 1.

28. Allied Naval Control of Shipping (NCS) has been established. Which statement is TRUE?

- (A) The Naval Control of Shipping Organization of each nation will serve their own ships only.
- (B) The conduct of US-flag ships in an allied port will be controlled by US NCS authorities.
- (C) Allied ships, which are at sea when an emergency is declared, will all be controlled by a central authority.
- (D) After Naval Control of Shipping has been established, permission to sail must come from local naval authorities or consular officers.

If choice D is selected set score to 1.

29. ECDIS must give an alarm for which of the following cases?

- (A) If the ship is going to reach a critical point on the planned route
- (B) When the speed of a dangerous target exceeds a set limit
- (C) If the ship's ETA has changed beyond the set limit
- (D) All of the above

If choice A is selected set score to 1.

30. The radar control that shortens all echoes on the display and reduces clutter caused by rain or snow is the _____.

- (A) sensitivity time control (sea clutter control)
- (B) fast time constant (differentiator)
- (C) brilliance control
- (D) receiver gain control

If choice B is selected set score to 1.

31. Automatic identification systems (AIS) are expected to broadcast all of the following information EXCEPT _____.

- (A) navigation status
- (B) ship's heading
- (C) port of origin
- (D) time stamp

If choice C is selected set score to 1.

32. Magnets in the binnacles of magnetic compasses are used to reduce the effect of _____.

- (A) local attraction
- (B) deviation
- (C) variation
- (D) All of the above

If choice B is selected set score to 1.

33. 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.

34. The region containing 3/4 of the mass of the atmosphere and the region to which are confined such phenomena as clouds, storms, precipitation and changing weather conditions is called _____.

- (A) troposphere
- (B) stratosphere
- (C) stratopause
- (D) tropopause

If choice A is selected set score to 1.

35. Your vessel is participating in the Voluntary Observing Ship Program. You are preparing WS Form B-80 as seen in illustration D041NG below. Your position is LAT 64°42'N, LONG 02°28'W. How would this be encoded?

- (A) 99647, 70025
- (B) 9064N, 9025W
- (C) 90647, 90024
- (D) 0647N, 00025

If choice A is selected set score to 1.

36. Your vessel is participating in the Voluntary Observing Ship Program, at 1200 ZT on 31 July, your position is LAT 24°33'N, LONG 173°05'W. You are preparing WS Form B-80 as seen in illustration D041NG below. How should you encode the first three groups after the call sign if you estimate the wind?

- (A) 01003, 99245, 71731
- (B) 01243, 92433, 71731
- (C) 31243, 99245, 71731
- (D) 31003, 92433, 71730

If choice A is selected set score to 1.

37. If the current and wind are in the same direction, the sea surface represents a wind speed _____.

- (A) higher than actually exists
- (B) that has no proportional relationship
- (C) that actually exists
- (D) lower than actually exists

If choice D is selected set score to 1.

38. You are underway on course 050°T and your maximum speed is 13 knots. The eye of a hurricane bears 100°T, 120 miles from your position. The hurricane is moving towards 275°T at 25 knots. What course should you steer at 13 knots to have the maximum CPA?

- (A) 339°
- (B) 320°
- (C) 326°
- (D) 333°

If choice D is selected set score to 1.

39. 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.

40. The winds of the "roaring forties" are strongest near _____.

- (A) 40°N
- (B) 50°N
- (C) 50°S
- (D) 40°S

If choice C is selected set score to 1.

41. During the winter months, the southeast trade winds are _____.

- (A) weaker than during the summer months
- (B) drier than during the summer months
- (C) wetter than during the summer months
- (D) stronger than during the summer months

If choice D is selected set score to 1.

42. A "Norther" in the Gulf of Mexico is _____.

- (A) a strong northerly wind that generally occurs between November and March
- (B) a wind shift to the north accompanied by a drop in temperature
- (C) a forcible northerly wind of at least 20 knots
- (D) All of the above

If choice D is selected set score to 1.

43. 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.

44. 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.

45. If a weather bulletin shows the center of a low pressure system to be 100 miles due east of you, what winds can you expect in the Southern Hemisphere?

- (A) North-northwesterly
- (B) South-southeasterly
- (C) North-northeasterly
- (D) South-southwesterly

If choice D is selected set score to 1.

46. Which navigational equipment is required to be tested and logged before a towing vessel embarks on a voyage of more than 24 hours?

- (A) GPS receiver(s)
- (B) All required navigational equipment, without exception
- (C) Radar(s) and VHF radio(s)
- (D) Compass and/or swing meter

If choice B is selected set score to 1.

47. The cold ocean current which meets the warm Gulf Stream between latitudes 40° and 43°N to form the "cold wall" is called the _____.

- (A) North Atlantic Current
- (B) North Cape Current
- (C) Labrador Current
- (D) Greenland Current

If choice C is selected set score to 1.

48. The Brazil Current flows in which general direction?

- (A) Northwesterly
- (B) Southeasterly
- (C) Southwesterly
- (D) Northerly

If choice C is selected set score to 1.

49. You are proceeding up a channel at night. It is marked by a range which bears 185°T. You steady up on a compass course of 180° with the range in line dead ahead. This indicates that you(r)

_____.

- (A) are being affected by a southerly current
- (B) must come right to get on the range
- (C) course is in error
- (D) compass has some easterly error

If choice D is selected set score to 1.

50. A line of position from a celestial observation is a segment of a _____.

- (A) parallel of declination
- (B) vertical circle
- (C) circle of equal altitude
- (D) parallel of altitude

If choice C is selected set score to 1.

D023NG



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NO.	SHIP NAME	DATE SENT (UTC)	TIME SENT (UTC)	STA. CALLED	FREQUENCY	
ADDRESSES						
U.S. Coast Guard: No address needed, start with BBXX indicator and ship's call sign.						
INMARSAT Standard A: Select—Coast Earth Station (CES), routine priority, duplex telex channel, and initiate call. When GA + is received, select 41 +. Upon receipt of answerback, NWS OBS MHTS, send the weather report starting with the BBXX indicator and ship's call sign. End the report with 5 periods. Try to limit INMARSAT call time to 30 seconds. Standard C: To establish special access code 41, see manufacturers recommended instructions for set-up, or the Mariners Weather' Log Summer, 1994, or later editions.						
U.S. commercial and foreign radio stations: To: OBS METEO _____ (get address from "Radio Stations Accepting. . . ."). Start with BBXX indicator and ship's call sign and combine the remaining numbers into 10-character groups.						
INDICATOR	CALL SIGN	YYGGi _w	99L _a L _a L _a	Q _c L _o L _o L _o	i _R i _x hVV	Nddff
BBXX			99		4	
ØØff	1S _n TTT	2S _n T _d T _d T _d	4PPPP	5appp	7 _{ww} W ₁ W ₂	8N _r C _L C _M C _H
222D _s V _s	ØS _s T _w T _w T _w	2P _w P _w H _w H _w	3d _{w1} d _{w1} d _{w2} d _{w2}	4P _{w1} P _{w1} H _{w1} H _{w1}	5P _{w2} P _{w2} H _{w2} H _{w2}	6I ₂ E _s E _s R _s
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