

U.S.C.G. Merchant Marine Exam

Master Less than 100 Gross Registered Tons

Q162 Navigation General - Near Coastal

(Sample Examination)

Choose the best answer to the following Multiple Choice Questions.

1. When you are steering on a pair of range lights and find the upper light is in line above the lower light, you should _____.
- (A) wait until the lights are no longer in a vertical line
 - (B) continue on the present course
 - (C) come right
 - (D) come left

If choice B is selected set score to 1.

2. Your vessel will be docking at Chester, PA, during the evening of 22 April 1983. The chart shows a depth of 20 feet (6.1 meters) at the pier. What will be the depth of water available at 1856 EST (ZD +5)?
- (A) 22.4 feet (6.8 meters)
 - (B) 24.9 feet (7.6 meters)
 - (C) 25.7 feet (7.8 meters)
 - (D) 23.4 feet (7.2 meters)

If choice D is selected set score to 1.

3. 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.

4. 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.

5. 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.

6. Your vessel is proceeding up a channel, and you see a pair of range lights that are in line dead ahead. The chart indicates that the direction of this pair of lights is $093^{\circ}T$, and the variation is $6^{\circ}E$. If the heading of your vessel at the time of the sighting is 097° per standard magnetic compass, what is the correct deviation?

- (A) $5^{\circ}E$
- (B) $10^{\circ}E$
- (C) $5^{\circ}W$
- (D) $10^{\circ}W$

If choice D is selected set score to 1.

7. 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.

8. Low pressure disturbances, which travel along the intertropical convergence zone, are called _____.

- (A) tropical waves
- (B) permanent waves
- (C) tidal waves
- (D) tropical storms

If choice A is selected set score to 1.

9. You are steering 202°T , and a light is picked up dead ahead at a distance of 14.6 miles at 2234. You change course to pass the light 5 miles off abeam to starboard. If you are making 21 knots, what is your ETA at the position 5 miles off the light?
- (A) 2310
 - (B) 2313
 - (C) 2316
 - (D) 2319

If choice B is selected set score to 1.

10. 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.

11. You are underway on course 160°T at 10 knots. The current is 210°T at 0.9 knots. What is the course made good?
- (A) 169°T
 - (B) 160°T
 - (C) 156°T
 - (D) 164°T

If choice D is selected set score to 1.

12. 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.

13. 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.

14. 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.

15. 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.

16. While proceeding along the Norwegian coast on course 039°T, you sight the black-yellow-black banded buoy shown in illustration D021NG below, bearing 053°T. What action should you take?

- (A) Maintain course
- (B) Alter course to 053° and leave the buoy close aboard on either side
- (C) Alter course to port to rapidly open the bearing to the right
- (D) Alter course to 060° and ensure that the true bearings decreases

If choice D is selected set score to 1.

17. 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.

18. 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.

19. 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 near by 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.

20. 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.

21. When a light is first seen on the horizon it will disappear again if the height of eye is immediately lowered several feet. When the eye is raised to its former height the light will again be visible. This process is called _____.

- (A) obscuring a light
- (B) checking a light
- (C) bobbing a light
- (D) raising a light

If choice C is selected set score to 1.

22. 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.

23. 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.

24. 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.

25. Which government agency publishes the U.S. Coast Pilot?

- (A) Army Corps of Engineers
- (B) National Geospatial-Intelligence Agency
- (C) National Ocean Service
- (D) U.S. Coast Guard

If choice C is selected set score to 1.

26. A harbor chart could have a scale of _____.

- (A) not more than 1:25,000
- (B) 1:150,000
- (C) not less than 1:500,000
- (D) 1:35,000

If choice D is selected set score to 1.

27. 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.

28. 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.

29. 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.

30. 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.

31. 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.

32. 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.

33. 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.

34. 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.

35. 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.

36. 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.

37. What is the average speed of the movement of a hurricane following the recurvature of its track?

- (A) 40 to 50 knots
- (B) 5 to 10 knots
- (C) 20 to 30 knots
- (D) Over 60 knots

If choice C is selected set score to 1.

38. Which instrument is used to measure the relative humidity of the air?

- (A) A spectrometer
- (B) A hydrometer
- (C) A barograph
- (D) A hygrometer

If choice D is selected set score to 1.

39. 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.

40. 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.

41. 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.

42. 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.

43. 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.

44. 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.

45. 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.

46. You are at anchor in the anchorage at the entrance to Delaware Bay. If you weigh anchor at 1445 DST (ZD +4) on 24 July 1983 and proceed northbound enroute to Philadelphia at a speed of 10 knots, you will have _____.

- (A) an ebb current north of New Castle, DE
- (B) a weak flood between Reedy Island and Edgemoor
- (C) a flood current from Ship John Shoal Lt. to Philadelphia
- (D) a flood current the entire trip

If choice B is selected set score to 1.

47. 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.

48. You are entering port and have been instructed to anchor, as your berth is not yet available. You are on a SW'y heading, preparing to drop anchor, when you observe the range lights as shown in illustration D047NG below, on your starboard beam. What action should you take?

- (A) ensure your ship will NOT block the channel or obstruct the range while at anchor
- (B) drop the anchor immediately as a change in the position of the range lights will be an indication of dragging anchor
- (C) NOT drop the anchor until the lights are in line
- (D) drop the anchor immediately as the range lights mark an area free of obstructions

If choice A is selected set score to 1.

49. You are underway in a vessel with a draft of 6.0 feet. You are in an area where the charted depth of the water is 4 fathoms. You would expect the depth of water beneath your keel to be approximately _____.

- (A) 12 feet
- (B) 18 feet
- (C) 24 feet
- (D) 30 feet

If choice B is selected set score to 1.

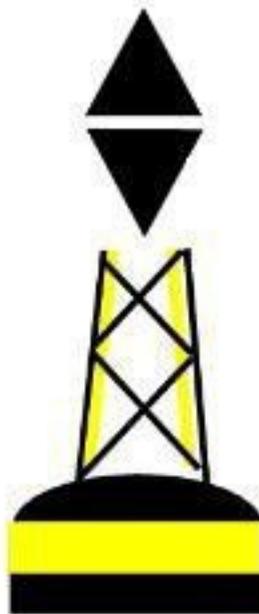
50. You are proceeding up a channel at night. It is marked by a range which bears $185^{\circ}T$. You steady up on a compass course of 180° with the range in line dead ahead. This indicates that you(r)

_____.

- (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.

D021NG



D023NG



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D041NG

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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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