

U.S.C.G. Merchant Marine Exam  
Operator Uninspected Passenger Vessels  
Q171 Navigation General - Near Coastal  
(Sample Examination)

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

1. 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.*

2. Which statement is TRUE concerning apogean tides?

- (A) They cause diurnal tides to become mixed.
- (B) They occur when the Moon is nearest the Earth.
- (C) They occur only at quadrature.
- (D) They have a decreased range from normal.

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

3. 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.*

4. 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.*

5. 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.*

6. 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.*

7. 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.*

8. 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.*

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. 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.*

**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.** Which type of GPS receiver has at least four channels to process information from several satellites simultaneously?

- (A) Multiplex
- (B) Sequential
- (C) Continuous
- (D) None of the above

*If choice C 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.** 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.*

**15.** 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.*

**16.** 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.*

**17.** 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.*

**18.** 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.*

**19.** 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.*

**20.** 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.*

**21.** 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.*

**22.** 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.*

**23.** 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.*

**24.** 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.*

**25.** 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.*

**26.** 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.*

**27.** 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.*

**28.** 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.*

**29.** 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.*

**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.** 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.*

**32.** 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  $097^{\circ}$  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.*

**33.** 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.*

**34.** What natural feature is responsible for the rather even climate found on the Florida peninsula throughout the year?

- (A) Strong masses of continental air
- (B) The Bermuda high
- (C) The cool waters of the Sargasso sea
- (D) The Gulf Stream

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

**35.** 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.*

**36.** On mid-ocean waters, the height of a wind-generated wave is not affected by the \_\_\_\_\_.

- (A) wind's velocity
- (B) fetch
- (C) duration of the wind
- (D) water depth exceeding 100 feet

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

**37.** 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.*

**38.** 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.*

**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.** 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.*

**41.** 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.*

**42.** 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.*

**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.** 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.*

**45.** The velocity of a rotary tidal current will be decreased when the Moon is \_\_\_\_\_.

- (A) full
- (B) new
- (C) at apogee
- (D) All of the above

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

**46.** The tides in Boston Harbor generally \_\_\_\_\_.

- (A) are diurnal in nature
- (B) have their variations caused by the changing declination of the Moon
- (C) have a greater range than the tides in Gulf Coast ports
- (D) All of the above

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

**47.** A tide is called diurnal when \_\_\_\_\_.

- (A) the high tide and low tide are exactly six hours apart
- (B) the high tide is higher and the low tide is lower than usual
- (C) two high tides occur during a lunar day
- (D) only one high and one low water occur during a lunar day

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

**48.** The range of tide is the \_\_\_\_\_.

- (A) maximum depth of the water at high tide
- (B) difference between the heights of high and low tide
- (C) duration of time between high and low tide
- (D) distance the tide moves out from the shore

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

**49.** You want to transit Hell Gate, NY on 23 July 1983. What is the period of time around the AM (ZD +4) slack before ebb when the current will be less than 0.3 knot?

- (A) 0939 to 0957
- (B) 0348 to 0356
- (C) 0844 to 0852
- (D) 0943 to 0953

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

**50.** 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.*

## D023NG



# National Maritime Center

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## D041NG

WS FORM B-80 (5-94) PRES. BY WMO DIRECTIVES		<b>WEATHER REPORT FOR IMMEDIATE TRANSMISSION</b>				U.S. DEPARTMENT OF COMMERCE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION NATIONAL WEATHER SERVICE
NO.	SHIP NAME	DATE SENT (UTC)	TIME SENT (UTC)	STA. CALLED	FREQUENCY	
<b>ADDRESSES</b>						
U.S. Coast Guard: No address needed, start with BBXX indicator and ship's call sign.						
<b>INMARSAT</b> 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 <sub>w</sub>	99L <sub>a</sub> L <sub>a</sub> L <sub>a</sub>	Q <sub>c</sub> L <sub>o</sub> L <sub>o</sub> L <sub>o</sub>	i <sub>R</sub> i <sub>x</sub> hVV	Nddff
BBXX			99		4	
ØØff	1S <sub>n</sub> TTT	2S <sub>n</sub> T <sub>d</sub> T <sub>d</sub> T <sub>d</sub>	4PPPP	5appp	7 <sub>ww</sub> W <sub>1</sub> W <sub>2</sub>	8N <sub>r</sub> C <sub>L</sub> C <sub>M</sub> C <sub>H</sub>
222D <sub>s</sub> V <sub>s</sub>	ØS <sub>s</sub> T <sub>w</sub> T <sub>w</sub> T <sub>w</sub>	2P <sub>w</sub> P <sub>w</sub> H <sub>w</sub> H <sub>w</sub>	3d <sub>w1</sub> d <sub>w1</sub> d <sub>w2</sub> d <sub>w2</sub>	4P <sub>w1</sub> P <sub>w1</sub> H <sub>w1</sub> H <sub>w1</sub>	5P <sub>w2</sub> P <sub>w2</sub> H <sub>w2</sub> H <sub>w2</sub>	6I <sub>2</sub> E <sub>s</sub> E <sub>s</sub> R <sub>s</sub>
8S <sub>w</sub> T <sub>b</sub> T <sub>b</sub> T <sub>b</sub>	ICE	C <sub>i</sub> S <sub>i</sub> b <sub>i</sub> D <sub>i</sub> Z <sub>i</sub>	PLAIN LANGUAGE			TRANSMITTED BY
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