

U.S.C.G. Merchant Marine Exam

Master or Mate Less than 200 Gross Registered Tons

Q152 Navigation General – Oceans or Near Coastal

(Sample Examination)

Choose the best answer to the following Multiple Choice Questions:

1. Which class of tide prevails in the greatest number of important harbors on the Atlantic Coast?

- (A) Interval
- (B) diurnal
- (C) Mixed
- (D) Semidiurnal

If choice D is selected set score to 1.

2. What is the reaction of a gyrocompass to an applied force known as?

- (A) Earth rate
- (B) Precession
- (C) Gyroscopic inertia
- (D) Gravity effect

If choice B is selected set score to 1.

3. What is the relative bearing of an object broad on the port bow?

- (A) 315°
- (B) 330°
- (C) 345°
- (D) 360°

If choice A is selected set score to 1.

4. To find the specific phase characteristic of a lighthouse on a sound of the United States you would use which reference?

- (A) Light List
- (B) U.S. Coast Pilot
- (C) Nautical Chart Catalog
- (D) American Practical Navigator

If choice A is selected set score to 1.

5. Which publication should you check for complete information on Puget Sound weather conditions?

- (A) Light List
- (B) Chart of the area
- (C) Sailing Directions
- (D) Coast Pilot

If choice D is selected set score to 1.

6. Charts should be corrected by using information published in which text?

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

If choice A is selected set score to 1.

7. On a clear, warm day, you notice the approach of a tall cumulus cloud. The cloud top has hard well defined edges and rain is falling from the dark lower edge. What should you expect if this cloud passes directly overhead?

- (A) A sudden decrease in wind speed
- (B) A sudden increase in wind speed
- (C) The wind speed will not change as it passes
- (D) The wind will back as it passes

If choice B is selected set score to 1.

8. Which symbol represents a 2-fathom curve?

- (A) .. _____ .. _____ .. _____
- (B) - - - - -
- (C) _____ . _____ . _____ .
- (D)

If choice D is selected set score to 1.

9. In mid-ocean, the characteristics of a wave are determined by three factors. What is NOT one of these factors?

- (A) Wind velocity
- (B) Length of time a wind has been blowing
- (C) Effect of the moon's gravity
- (D) Fetch

If choice C is selected set score to 1.

10. Which of the sources contains information on Northern Right Whales?

- (A) Ship's Medicine Chest and Medical Aid at Sea
- (B) HO 229
- (C) the Coast Pilot
- (D) the Nautical Almanac

If choice C is selected set score to 1.

11. Which causes the wind flow from the horse latitudes to the doldrums to be deflected?

- (A) Differing atmospheric pressures
- (B) The mid-latitude, semi-permanent high
- (C) The Coriolis force
- (D) The prevailing westerlies

If choice C is selected set score to 1.

12. The true course between two points is 312° . Your gyrocompass has an error of 3°W . You make an allowance of 4° leeway for a west by south wind. What gyro course should be steered to make the true course good?

- (A) 318°pgc
- (B) 305°pgc
- (C) 311°pgc
- (D) 315°pgc

If choice C is selected set score to 1.

13. When operated over a muddy bottom, a fathometer may indicate which of the following?

- (A) Two depth readings
- (B) A shallow depth reading
- (C) No depth reading
- (D) A zero depth reading

If choice A is selected set score to 1.

14. Your vessel is participating in the Voluntary Observing Ship Program, you are preparing WS Form B-80 as seen in illustration D041NG below. You are hove to in a hurricane on a heading of 328°T . The wind is from 030° true at 119 knots. How should this be encoded on the weather report form?

- (A) 80399
- (B) 83099
- (C) 83011
- (D) 80312

If choice A is selected set score to 1.

15. You depart LAT $49^\circ45.0'\text{N}$, LONG $06^\circ35.0'\text{W}$, and steam 3599 miles on course 246.5°T . What is the longitude of your arrival by Mercator sailing?

- (A) LONG $76^\circ36.2'\text{W}$
- (B) LONG $78^\circ14.0'\text{W}$
- (C) LONG $77^\circ02.8'\text{W}$
- (D) LONG $78^\circ22.6'\text{W}$

If choice C is selected set score to 1.

16. Entering from sea, how would a daymark on the port side of the channel be indicated on a chart?

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

If choice B is selected set score to 1.

17. When drawing a weather map and an isobar crosses a front, the isobar is drawn _____.

- (A) kinked and pointing away from the low
- (B) kinked and pointing towards the high for a warm front only
- (C) kinked and pointing towards the low
- (D) perpendicular to the front

If choice A is selected set score to 1.

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

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

If choice C is selected set score to 1.

19. You are at anchor in the anchorage at the entrance to Delaware Bay. You weigh anchor at 1445 DST (ZD +4) on 24 July 1983 and proceed northbound enroute to Philadelphia at a speed of 10 knots. Which of the following should you expect to experience?

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

If choice D is selected set score to 1.

20. In the North Sea area, you sight a buoy showing an uninterrupted quick-flashing white light. Which of the four topmarks shown in illustration D031NG below will this buoy be fitted with under the IALA Buoyage system?

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

If choice B is selected set score to 1.

21. In most cases, the direction of the apparent wind lies between the bow and which reference point?

- (A) The beam on the lee side
- (B) The true north
- (C) The direction of the true wind
- (D) The beam on the windward side

If choice C is selected set score to 1.

22. You are in the Northern Hemisphere and a tropical wave is located 200 miles due east of your position. Where will the wave be located 12 hours later?

- (A) Farther away to the east
- (B) In the same position
- (C) Farther away to the west
- (D) Nearby to the east

If choice D is selected set score to 1.

23. Quadrantal error in a gyrocompass has its GREATEST effect on which of the following?

- (A) When the vessel is in high latitudes
- (B) When the vessel is on north or south headings
- (C) When the vessel is near the equator
- (D) When the vessel is on intercardinal headings

If choice D is selected set score to 1.

24. Which statement about the Flinders bar of the magnetic compass is CORRECT?

- (A) It compensates for error caused by the heeling of a vessel in rough seas
- (B) It is only needed in equatorial waters if the vessel is on a cardinal heading
- (C) It compensates for quadrantal deviation in horizontal hard iron
- (D) It compensates for the error caused by the vertical component of the Earth's magnetic field

If choice D is selected set score to 1.

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

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

If choice B is selected set score to 1.

- 26.** You are underway and pass by a lighthouse. Its light, which was white since you first sighted it, changes to red. What does this indicate?
- (A) The light is characterized as alternately flashing
 - (B) It is the identifying light characteristic of the lighthouse
 - (C) The lighthouse has lost power and has switched to emergency lighting
 - (D) That you have entered an area of shoal water or other hazard

If choice D is selected set score to 1.

- 27.** The Light List indicates that a light has a nominal range of 14 miles and is 42 feet (12.7 m) high. If the visibility is 16 miles and your height of eye is 20 feet (6.1 m), at which approximate distance will you sight the light?
- (A) 20.1 miles
 - (B) 16.0 miles
 - (C) 12.8 miles
 - (D) 7.6 miles

If choice C is selected set score to 1.

- 28.** Which is TRUE of a nun buoy in the IALA Region B system of buoyage?
- (A) It will be green in color
 - (B) It will be left to port when entering from seaward
 - (C) It will have an even number
 - (D) It will be cylindrical in shape

If choice C is selected set score to 1.

- 29.** 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 $283^{\circ}T$, and the variation is $13^{\circ}E$. If the heading of your vessel at the time of the sighting is 278° per standard compass, what is the deviation?
- (A) $5^{\circ}E$
 - (B) $5^{\circ}W$
 - (C) $8^{\circ}E$
 - (D) $8^{\circ}W$

If choice D is selected set score to 1.

- 30.** On 30 July, your 0200 zone time (ZD +4) DR position is LAT 43°48'N, LONG 78°00' W. At that time, you observe Polaris bearing 008.7°psc. The chronometer time of the observation is 05h 58m 07s, and the chronometer is 0m 23s slow. The variation is 10.5°W. What is the deviation of the magnetic compass?
- (A) 0.5°E
 - (B) 3.0°E
 - (C) 7.5°W
 - (D) 18.0°W

If choice B is selected set score to 1.

- 31.** You are sailing south on the Intracoastal Waterway (ICW) when you sight a red nun buoy with a yellow square painted on it. Which statement is TRUE?
- (A) ICW traffic should not proceed beyond the buoy unless the crossing waterway is clear of all traffic.
 - (B) The waterway in that area has shoaled and the available depth of water is less than the project depth.
 - (C) You should leave the buoy to port.
 - (D) The buoy is off station and should be ignored as a navigational mark.

If choice C is selected set score to 1.

- 32.** Under the Uniform State Waterway Marking System how is a mooring buoy painted?
- (A) Any color that does not conflict with the lateral system
 - (B) White with a green top
 - (C) Yellow
 - (D) White with a blue band

If choice D is selected set score to 1.

- 33.** Which instrument is used to measure the relative humidity of the air?
- (A) A hydrometer
 - (B) A barograph
 - (C) A spectrometer
 - (D) A hygrometer

If choice D is selected set score to 1.

- 34.** A dead reckoning (DR) plot _____.
- (A) must be plotted using magnetic courses
 - (B) is most useful when in sight of land
 - (C) may be started at an assumed position
 - (D) ignores the effect of surface currents

If choice D is selected set score to 1.

- 35.** You will be loading in Boston Harbor to a maximum draft of 32'06". The charted depth of an obstruction in the channel near Boston Light is 30 feet and you wish to have 3 feet of keel clearance. The steaming time from the pier to the obstruction is 01h 05m. What is the latest time (ZD +4) you can sail on 17 May 1983 and meet these requirements?
- (A) 1610
 - (B) 1728
 - (C) 1821
 - (D) 2350

If choice B is selected set score to 1.

- 36.** Some lights used as aids to marine navigation have a red sector to indicate a danger area. The limits of a colored sector of a light are listed in the Light List in which of the following manners?
- (A) An outline of the area of the sector
 - (B) True bearings as observed from the light toward the ship
 - (C) True bearings as observed from the ship toward the light
 - (D) Geographical positions outlining the area of the sector

If choice C is selected set score to 1.

- 37.** How do preferred channel buoys indicate the preferred channel to transit?
- (A) Odd or even numbers
 - (B) The buoy's light rhythms
 - (C) The location of the buoy in the channel junction
 - (D) The color of their top band

If choice D is selected set score to 1.

- 38.** You are plotting a running fix in an area where there is a determinable current. How should this current be treated in determining the position?
- (A) The current should be ignored.
 - (B) The set should be applied to the second bearing.
 - (C) The course and speed made good should be determined and used to advance the LOP.
 - (D) The drift should be added to the ship's speed.

If choice C is selected set score to 1.

- 39.** If the current and wind are in the same direction, what does the sea surface represent concern the true wind speed?
- (A) The appearance of the sea surface does not change
 - (B) It appears less than actually exists
 - (C) It appears at the correct speed
 - (D) It appears higher than actually exists

If choice B is selected set score to 1.

40. 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

If choice C is selected set score to 1.

41. Under the U.S. Aids to Navigation System on the Western Rivers, which describes the daymarks on the right descending bank?

- (A) Green triangular-shaped panels with green reflector borders
- (B) Green square-shaped panels with green reflector borders
- (C) Red diamond-shaped panels with red reflector borders
- (D) Red triangular-shaped panels with red reflector borders

If choice B is selected set score to 1.

42. What causes permanent magnetism on a vessel?

- (A) The horizontal component of the earth's magnetic field acting on the horizontal soft iron
- (B) The vertical component of the earth's magnetic field acting on the vertical soft iron
- (C) The operation of electrical equipment and generators on board ship
- (D) The earth's magnetic field affecting the ship's hard iron during construction

If choice D is selected set score to 1.

43. Weather patterns in the Gulf of Mexico area of the United States are _____.

- (A) tropical over Florida and subtropical over the rest of the Gulf Coast area
- (B) extremely hot in summer
- (C) those of a tropical region
- (D) those of a transition zone between tropical and a temperate area

If choice D is selected set score to 1.

44. Which is TRUE concerning air masses near the earth's surface?

- (A) Air masses are not affected by the earth's gravity
- (B) They are not deflected by the earth's rotation
- (C) They move from areas of high pressure to areas of low pressure
- (D) In North America the air masses move from east to west

If choice C is selected set score to 1.

- 45.** On 31 October your 1700 zone time DR position is LAT 27°17.0'N, LONG 116°10.0'W, when an amplitude of the Sun is observed. The Sun's center is on the visible horizon and bears 246.5° per standard magnetic compass. Variation in the area is 8.5°E. The chronometer reads 01h 01m 23s and the chronometer error is 01m 54s slow. What is the deviation of the standard compass?
- (A) 0.8°E
 - (B) 0.8°W
 - (C) 2.5°E
 - (D) 2.5°W

If choice B is selected set score to 1.

- 46.** 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) Cirrus
 - (B) Cumulonimbus
 - (C) Altostratus
 - (D) Cirrocumulus

If choice D is selected set score to 1.

- 47.** When do neap tides occur?
- (A) At approximately 28-day intervals
 - (B) When the Sun, Moon, and Earth are in line
 - (C) When the Moon is at quadrature
 - (D) At a new or full Moon

If choice C is selected set score to 1.

- 48.** A sailing chart could have which scale?
- (A) Less than 1:25,000
 - (B) 1:35,000
 - (C) 1:100,000
 - (D) 1:700,000

If choice D is selected set score to 1.

- 49.** You are steaming on a course of 253°T at 14 knots. At 2329 you observe a lighthouse bearing 282°T. At 2345 the lighthouse bears 300°T. What is your distance off at the second bearing?
- (A) 5.2 miles
 - (B) 4.3 miles
 - (C) 3.7 miles
 - (D) 5.9 miles

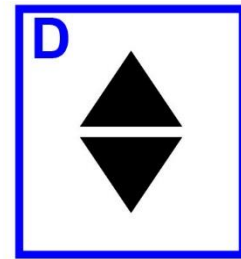
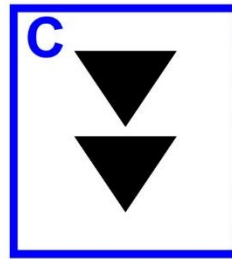
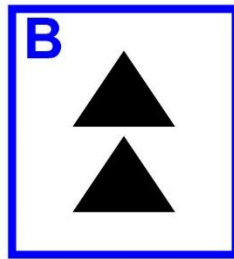
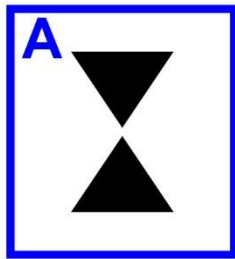
If choice D is selected set score to 1.

50. Which name is given to the pressure-sensitive element of an aneroid barometer?

- (A) Constant pressure capsule
- (B) Pressure bellows
- (C) Column of mercury
- (D) Syphon cell

If choice D is selected set score to 1.

D031NG




National Maritime Center

Keep 'em Safe, Keep 'em Sailing



National
Maritime
Center

D041NG

WS FORM B-80 (5-94) PRES. BY WMO DIRECTIVES				U.S. DEPARTMENT OF COMMERCE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION NATIONAL WEATHER SERVICE		
WEATHER REPORT FOR IMMEDIATE TRANSMISSION						
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	YYGG _i w	99L _a L _a L _a	Q _c L _o L _o L _o L _o	i _R i _x hVV	Nddff
BBXX			99		4	
00fff	1s _n TTT	2s _n T _d T _d T _d	4PPPP	5appp	7wwW ₁ W ₂	8N _h C _L C _M C _H
222D _s v _s	0s _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 _s E _s E _s R _s
8S _w T _b T _b T _b	ICE	c _i S _i b _i D _i z _i	PLAIN LANGUAGE			TRANSMITTED BY
No Government Administration, or Company or person employed in the forwarding and delivery of this message shall be liable for any loss or damage arising from failure to transmit or to deliver the said message or from any neglect, delay, error or omission in the transmission thereof.						

Supersedes NOAA Form 72-4A (1-82) which should be destroyed.

Adapted for testing purposes only from U.S. Department of Commerce
 National Oceanic and Atmospheric Administration
 National Weather Service

Further reproduction prohibited without permission