

U.S.C.G. Merchant Marine Exam

Mate Less than 500-1600 Gross Registered Tons

Q329 Nav General - Great Lakes and Inland

(Sample Examination)

Choose the best answer to the following Multiple Choice questions.

1. You are on course 180°T and take a relative bearing of a lighthouse of 225°. What is the true bearing of the lighthouse?
- (A) 180°
 - (B) 270°
 - (C) 045°
 - (D) 135°

If choice C is selected set score to 1.

2. Which light characteristic may be used on a special purpose mark?
- (A) Occulting
 - (B) Quick flashing
 - (C) Equal interval
 - (D) Fixed

If choice D is selected set score to 1.

3. Which topmark shown in illustration D023NG below identifies an isolated danger?
- (A) A
 - (B) B
 - (C) C
 - (D) D

If choice B is selected set score to 1.

4. What is published by the U.S. Coast Guard?
- (A) Tide Tables
 - (B) Nautical Charts
 - (C) Light List
 - (D) U.S. Coast Pilot

If choice C is selected set score to 1.

5. Which term defines the difference between the heights of low and high tides?
- (A) Tidal range
 - (B) Tidal period
 - (C) Tidal distance
 - (D) The depth of tide

If choice A is selected set score to 1.

6. Which feature, when set to zero, might allow a GPS unit to have an accuracy equivalent to Precise Positioning Service receiver capability?

- (A) Selective Availability
- (B) Transit
- (C) Auto-correlation
- (D) Anti-spoofing

If choice A is selected set score to 1.

7. To make sure of getting the full advantage of a favorable current, you should reach an entrance or strait at which time in relation to the predicted time of the favorable current?

- (A) One hour after
- (B) 30 minutes before
- (C) 30 minutes before flood, one hour after an ebb
- (D) At the predicted time

If choice B is selected set score to 1.

8. What feature(s) of a daymark is (are) used to identify the beacon upon which it is mounted?

- (A) Method of construction
- (B) Color and shape
- (C) Size
- (D) Signal characteristics

If choice B is selected set score to 1.

9. How are cumulonimbus clouds formed?

- (A) In heavy rainstorms
- (B) By vertical air movements
- (C) By horizontal air movements
- (D) By any movement of moist air

If choice B is selected set score to 1.

10. What does a white buoy with a blue band signify?

- (A) A mooring buoy
- (B) A hydrographic data collection buoy
- (C) Marking a restricted area
- (D) An isolated danger mark

If choice A is selected set score to 1.

11. Which statement about gyrocompass error is TRUE?

- (A) The sign (E or W) of the error will change with different headings of the ship.
- (B) Any error shown by a gyro repeater will be the same as the error of the master compass.
- (C) The amount of the error and the sign will generally be the same on all headings.
- (D) Any error will remain constant unless the compass is stopped and restarted.

If choice C is selected set score to 1.

12. The climate of the eastern coast of the Gulf of Mexico _____.

- (A) has an east coast marine type of climate
- (B) varies from warm to subtropical
- (C) is humid and subtropical throughout the year
- (D) has a Mediterranean type of climate

If choice B is selected set score to 1.

13. Your vessel is proceeding down 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 $229^{\circ}T$, and variation is $6^{\circ}W$. If the heading of your vessel at the time of the sighting is 232° per standard magnetic compass, what is the deviation?

- (A) $3^{\circ}E$
- (B) $9^{\circ}E$
- (C) $3^{\circ}W$
- (D) $9^{\circ}W$

If choice A is selected set score to 1.

14. What does a hygrometer measure?

- (A) The wind velocity
- (B) The relative humidity
- (C) The absolute temperature
- (D) The atmospheric pressure

If choice B is selected set score to 1.

15. You are approaching a light fitted with a RACON. How is the light identified on the radar?

- (A) A radial line appearing on the same bearing originating at a greater range than the light
- (B) A circle appearing on the scope surrounding the light
- (C) A dashed line originating from the center of the scope and running to the light
- (D) An audible signal when the sweep crosses the light

If choice A is selected set score to 1.

16. You are radar scanning for a buoy fitted with a racon. In illustration D017NG below, which radar screen represents the presentation you should expect on the PPI?

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

If choice B is selected set score to 1.

17. Which is TRUE of a vertically-striped buoy?

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

If choice D is selected set score to 1.

18. In the U.S. Aids to Navigation System, lateral aids as seen entering from seaward will display lights with which characteristic?

- (A) Occulting
- (B) Quick Flashing
- (C) Flashing
- (D) All of the above

If choice D is selected set score to 1.

19. What does a Doppler log in the bottom return mode indicate?

- (A) The speed over the ground
- (B) The velocity of the current
- (C) The bottom characteristics
- (D) The depth of the water

If choice A is selected set score to 1.

20. Permission to enter the riverward chamber of twin locks is given by the lockmaster and consists of which sound signal?

- (A) One long blast
- (B) Two long blasts
- (C) Two short blasts
- (D) One short blast

If choice B is selected set score to 1.

21. The term "flood current" refers to that time when the water _____.

- (A) is moving towards the ocean
- (B) level is rising because of heavy rains
- (C) is flowing towards the land
- (D) level is not changing

If choice C is selected set score to 1.

22. Which type of current which will have the greatest effect on the course made good for your vessel?

- (A) A current that flows at nearly right angles to your course steered
- (B) A rotary current in which the direction of current flow constantly changes
- (C) A current flowing in the opposite direction as your course steered
- (D) A current flowing in the same direction as your course steered

If choice A is selected set score to 1.

23. You are steaming southward along the west coast of the United States when you sight a buoy showing a flashing green light. How should you pass this buoy?

- (A) Leave it to your port.
- (B) Pass it close aboard on either side.
- (C) Pass it on either side but well clear of it.
- (D) Leave it to your starboard.

If choice D is selected set score to 1.

24. What causes deviation in a magnetic compass?

- (A) The changes in the earth's magnetic field
- (B) The magnetic influence inherent to that particular vessel
- (C) The magnetic lines of force not coinciding with the lines of longitude
- (D) A nearby magnetic land masses or mineral deposits

If choice B is selected set score to 1.

25. The southeast trade winds actually blow in which direction?

- (A) East
- (B) Southeast
- (C) Northwest
- (D) South

If choice C is selected set score to 1.

26. What publication has information on the climate, distances, navigation regulations, outstanding landmarks, channels and anchorages of Long Island Sound?

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

If choice C is selected set score to 1.

27. You are approaching Chatham Strait from the south in foggy weather. You have Coronation Island and Hazy Islands on the radar. Suddenly the radar malfunctions. You then resort to using whistle echoes to determine your distance off Coronation Island. Your stopwatch reads 16.3 seconds for the echo to be heard. How far are you off Coronation Island?

- (A) 1.0 mile
- (B) 1.5 miles
- (C) 2.0 miles
- (D) 2.5 miles

If choice B is selected set score to 1.

28. What does the Flinders bar on a magnetic compass compensates for?

- (A) Induced magnetism in horizontal soft iron
- (B) Permanent magnetism in ship's steel
- (C) Vessel's inclination from the vertical
- (D) Induced magnetism in vertical soft iron

If choice D is selected set score to 1.

29. If a sound signal is emitted from the oscillator of a fathometer, and two seconds elapse before the returning signal is picked up, what depth of water is indicated?

- (A) 1248 fathoms
- (B) 1048 fathoms
- (C) 824 fathoms
- (D) 1648 fathoms

If choice C is selected set score to 1.

30. How many high waters usually occur each day on the East Coast of the United States?

- (A) One
- (B) Two
- (C) Three
- (D) Four

If choice B is selected set score to 1.

31. You are on course 251°pgc and 241° per magnetic compass, when you observe a range in line bearing 192°pgc. The chart indicates that the range is in line on a bearing of 194°T. The variation is 16°E. What is the deviation of the magnetic compass?

- (A) 2°E
- (B) 2°W
- (C) 4°W
- (D) 10°W

If choice C is selected set score to 1.

32. You are in a channel inbound from sea. A daymark used to mark a channel junction, when the preferred channel is to port will have the shape indicated by what letter in illustration D045NG below?

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

If choice D is selected set score to 1.

33. If the current and wind are in opposite directions, what does the sea surface indicate?

- (A) The surface does not change, each cancels the other
- (B) The surface indicates a higher wind speed than what really exists
- (C) The surface indicates a lower wind speed than what really exists
- (D) The surface indicates a greatly reduced wind speed

If choice B is selected set score to 1.

34. How often is The Local Notice to Mariners updated?

- (A) Daily
- (B) Monthly
- (C) Weekly
- (D) Semiannually

If choice C is selected set score to 1.

35. A weather forecast states that the wind will commence veering. In the Northern Hemisphere, what changes will occur?

- (A) The wind will continue blowing from the same direction
- (B) The wind will shift in a clockwise manner
- (C) The wind will shift in a counterclockwise manner
- (D) The wind will increase in velocity

If choice B is selected set score to 1.

36. Which type of cloud is among the most dependable for giving an indication of an approaching weather system?

- (A) Cumulus
- (B) Altostratus
- (C) Cumulostratus
- (D) Nimbus

If choice B is selected set score to 1.

37. Which is the reference datum used in determining the heights of land features on most charts?

- (A) Mean high water
- (B) Mean sea level
- (C) Half-tide level
- (D) Mean low water

If choice A is selected set score to 1.

38. You have replaced the chart paper in the course recorder. Which statement is TRUE?

- (A) Set the zone pen to the far right of the paper
- (B) Line the course pen up on 0 degree mark
- (C) Adjust the chart paper to indicate GMT
- (D) Test the electrical gain to the thermograph pens

If choice C is selected set score to 1.

39. What is characteristic of an isophase light?

- (A) 2 sec. flash, 5 sec. eclipse
- (B) 4 sec. flash, 2 sec. eclipse, 3 sec. flash, 2 sec. eclipse
- (C) 1 sec. flash, 1 sec. eclipse
- (D) 6 sec. flash, 3 sec. eclipse

If choice C is selected set score to 1.

40. On a transpacific voyage, you receive a message from your vessel's operators saying that your vessel has been consigned to voluntary Naval Cooperation and Guidance for Shipping (NCAGS). Where can further information be located?

- (A) The Light List
- (B) the Coast Pilot
- (C) Radio Aids to Navigation (PUB 117)
- (D) the International Code of Signals (PUB 102)

If choice C is selected set score to 1.

41. A position obtained by applying ONLY your vessel's course and speed to a known position is a _____.

- (A) running fix
- (B) fix
- (C) probable position
- (D) dead-reckoning position

If choice D is selected set score to 1.

42. You are entering an east coast port and see a buoy with a yellow triangle painted on it. What does the symbol indicate?

- (A) The buoy is a special mark
- (B) You are in the vicinity of the ICW
- (C) The buoy designates a sharp turn in the channel
- (D) The buoy is off station

If choice B is selected set score to 1.

43. Under the U.S. Aids to Navigation System used on the Western Rivers, which is TRUE of the aids to navigation lights on the right descending bank?

- (A) They can only be white lights
- (B) They are white or red lights
- (C) They are white or green lights
- (D) They can only be green lights

If choice C is selected set score to 1.

44. The dry bulb temperature is 78°F and the wet bulb temperature is 62°F. What is the relative humidity?

- (A) 16%
- (B) 24%
- (C) 39%
- (D) 79%

If choice C is selected set score to 1.

45. A current perpendicular to a vessel's track has the greatest effect on the vessel's course made good _____.

- (A) in deep water
- (B) at low vessel speeds
- (C) in shallow water
- (D) at high vessel speeds

If choice B is selected set score to 1.

46. You desire to make good a true course of 129° . The variation is 7°E , magnetic compass deviation is 4°E , and gyrocompass error is 2°W . An easterly wind produces a 4° leeway. What is the course to steer per standard magnetic compass to make the true course good?

- (A) 114°psc
- (B) 122°psc
- (C) 116°psc
- (D) 126°psc

If choice A is selected set score to 1.

47. How are clouds formed?

- (A) As winds blow across bodies of water, the sun causes the moisture to be absorbed and move upward forming clouds
- (B) As a mass of warm, humid air rises into the atmosphere and cools, condensing moisture into small droplets
- (C) Dry air compresses moisture from the atmosphere into clouds
- (D) Only when the relative humidity of the atmosphere is low

If choice B is selected set score to 1.

48. Which defines a light's luminous range?

- (A) The average distance of visibility of the light
- (B) The maximum distance at which a light may be seen considering the height of the light and the height of the observer
- (C) The maximum distance at which a light may be seen under existing visibility conditions
- (D) The maximum distance at which a light may be seen in clear weather

If choice C is selected set score to 1.

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

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

If choice B is selected set score to 1.

50. Which is used to mark the draw span of a floating drawbridge?

- (A) A flashing blue lights
- (B) Three red lights on each side of the draw
- (C) A yellow diamond
- (D) Two white lights

If choice C is selected set score to 1.

51. Safe water buoys may show ONLY which type of light?

- (A) flashing green lights
- (B) flashing red lights
- (C) yellow lights
- (D) white lights

If choice D is selected set score to 1.

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

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

If choice C is selected set score to 1.

53. You are on course 344°T and take a relative bearing of a lighthouse of 090°. What is the true bearing to the lighthouse?

- (A) 016°
- (B) 074°
- (C) 254°
- (D) 270°

If choice B is selected set score to 1.

54. Your draft is 24 feet. You wish to pass over an obstruction near Lovell Island, MA, on 6 May 1983. The charted depth is 22 feet. Allowing a safety margin of 3.0 feet, what is the earliest time after 0200 DST (ZD +4) that this passage can be made?

- (A) 0215
- (B) 0245
- (C) 0310
- (D) 0347

If choice D is selected set score to 1.

- 55.** You are steering 318°psc. A northeasterly wind causes 3° of leeway. The variation is 14°E and the deviation table is extracted below. What will be the true course made good?

DEVIATION TABLE

Magnetic

<u>Heading</u>	<u>Deviation</u>
300°	2°E
315°	0
330°	2°W

- (A) 303°T
- (B) 329°T
- (C) 301°T
- (D) 327°T

If choice B is selected set score to 1.

- 56.** In waters where the cardinal system is used where would you expect to find danger?

- (A) Lying to the east of an eastern quadrant buoy
- (B) Lying to the south of an eastern quadrant buoy
- (C) Lying to the south of a northern quadrant buoy
- (D) Beneath or directly adjacent to the buoy

If choice C is selected set score to 1.

- 57.** Which agency maintains federal aids to navigation?

- (A) Maritime Administration
- (B) Corps of Engineers
- (C) Coast Guard
- (D) National Ocean Service

If choice C is selected set score to 1.

- 58.** What will be the height of tide at Three Mile Harbor Entrance, Gardiners Bay, NY, at 0700 (ZD +5) on 14 Nov 1983?

- (A) 1.1 feet (0.3 meters)
- (B) 1.7 feet (0.5 meters)
- (C) 1.9 feet (0.6 meters)
- (D) 2.2 feet (0.7 meters)

If choice B is selected set score to 1.

59. White and orange buoys, if lighted, show which color light?

- (A) Alternating yellow and white
- (B) Red
- (C) White
- (D) Orange

If choice C is selected set score to 1.

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

- (A) National Imagery and Mapping Agency
- (B) U.S. Coast Guard
- (C) National Oceanic and Atmospheric Administration
- (D) U.S. Naval Observatory

If choice C is selected set score to 1.

61. You take a bearing of 264° of a lighthouse. Which bearing of another object would give the best fix?

- (A) 239°
- (B) 291°
- (C) 182°
- (D) 059°

If choice C is selected set score to 1.

62. Which of the following describes gyrocompass repeaters which reproduce the indications of the master gyrocompass?

- (A) They are accurate electronic servomechanisms
- (B) They are accurate only if the vessel is underway
- (C) They are accurate only in the Polar regions
- (D) They are hand operated

If choice A is selected set score to 1.

63. Your vessel is underway on a course of $323.5^\circ T$ at a speed of 16 knots. At 1945 a light bears $350^\circ T$. At 2010 the light bears $008.5^\circ T$. What will be your distance off when abeam of the light?

- (A) 8.7 miles
- (B) 3.3 miles
- (C) 4.8 miles
- (D) 6.7 miles

If choice D is selected set score to 1.

64. Determine the time after 0300 CST (ZD +6) when the velocity of the tidal current will be 0.5 knot on 16 April 1983, at Port Arthur Canal Entrance, TX.

- (A) 0436
- (B) 0507
- (C) 0538
- (D) 0554

If choice B is selected set score to 1.

65. The light characteristic of flashing is used in the Aids to Navigation System on the Western Rivers. Which example is required to utilize this characteristic?

- (A) Daymarks with no lateral significance
- (B) Lights marking the right descending bank
- (C) Lights marking the left descending bank
- (D) Preferred channel buoys

If choice B is selected set score to 1.

66. What will be the velocity of the tidal current in Bolivar Roads, Texas, at a point 0.5 mile north of Ft. Point, on 23 November 1983 at 0330 CST (ZD +6)?

- (A) Slack water
- (B) 0.8 kt
- (C) 1.2 kts
- (D) 3.4 kts

If choice A is selected set score to 1.

67. You are steaming on a course of 246°T at 17 knots. At 2107 you observe a lighthouse bearing 207°T. At 2119 the lighthouse bears 179°T. What is your distance off at the second bearing?

- (A) 4.2 miles
- (B) 4.6 miles
- (C) 3.9 miles
- (D) 5.1 miles

If choice B is selected set score to 1.

68. The luminous range of a light takes into account which factor?

- (A) The observer's height of eye
- (B) The glare from background lighting
- (C) The existing visibility conditions
- (D) The elevation of the light

If choice C is selected set score to 1.

69. Buoys which only mark the left or right side of the channel will never exhibit a light with which characteristic?

- (A) Composite group flashing
- (B) Flashing
- (C) Equal interval (isophase)
- (D) Quick flashing

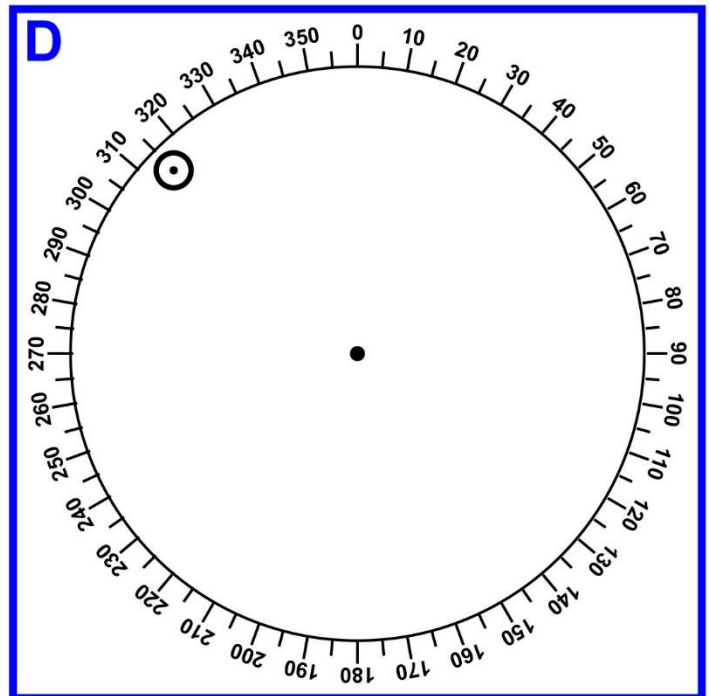
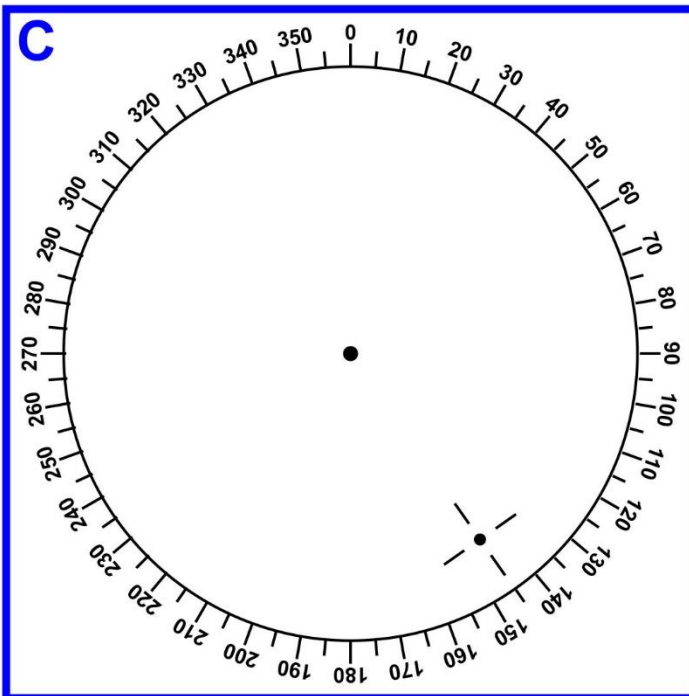
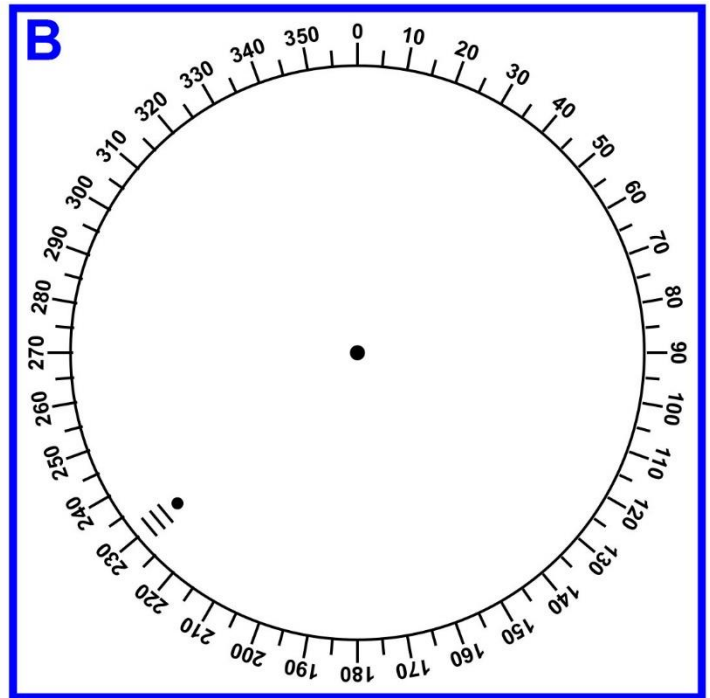
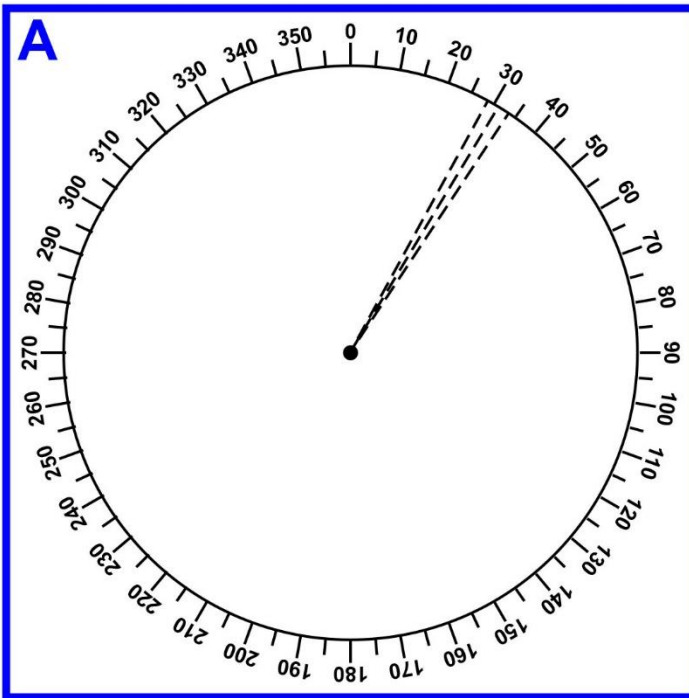
If choice A is selected set score to 1.

70. What do chart legends printed in capital letters indicate about the associated landmark?

- (A) The landmark is inconspicuous
- (B) The landmark has a radio transmitter
- (C) The landmark is conspicuous
- (D) It is a government facility or station

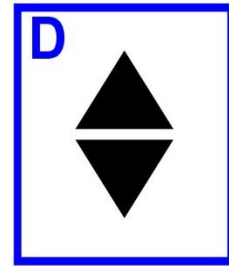
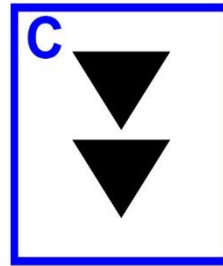
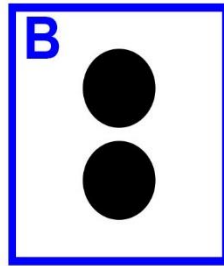
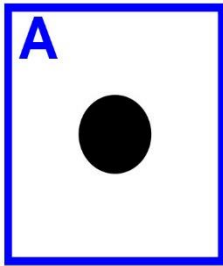
If choice C is selected set score to 1.

D017NG



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