U.S.C.G. Merchant Marine Exam

Master Near Coastal Less than 100 Gross Registered Tons

Q162 Navigation General – Near Coastal

(Sample Examination)

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

1. While on a course of 349°T, a light bears 13° on your starboard bow at a distance of 10.8 miles. What course should you steer to pass 2.5 miles abeam of the light, leaving it to starboard?

   A. 336°
   B. 323°
   C. 002°
   D. 349°

   Correct answer: D

2. You are steaming on a course of 084°T at a speed of 13 knots. At 1919 a lighthouse bears 106.5°T. At 1957 the same lighthouse bears 129°T. What will be your distance off the lighthouse when abeam?

   A. 5.7 miles
   B. 8.2 miles
   C. 7.1 miles
   D. 4.3 miles

   Correct answer: A

3. You are steering 173°T, and a light is picked up dead ahead at a distance of 13.9 miles at 0054. You change course to pass the light 4.5 miles off abeam to port. If you are making 21 knots, what is your ETA at the position 4.5 miles off the light?

   A. 0122
   B. 0125
   C. 0131
   D. 0134

   Correct answer: C

4. You are steering a magnetic compass course of 075°. The variation for the area is 10°W, and the compass deviation is 5°E. What is the true course you are steering?

   A. 090°T
   B. 080°T
   C. 070°T
   D. 060°T

   Correct answer: C

5. You are underway on course 241°T at a speed of 18.2 knots. You sight a daymark bearing 241°T at a radar range of 3.9 miles at 1006. If you change course at 1009, what is the course to steer to leave the daymark abeam to starboard at 1.0 mile?

   A. 257°T
   B. 218°T
   C. 260°T
   D. 222°T

   Correct answer: D

6. You wish to make good a course of 300°T while turning for an engine speed of 11 knots. The set is 350°T, and the drift is 2.1 knots. Which course should you steer?

   A. 278°T
   B. 288°T
   C. 292°T
   D. 308°T

   Correct answer: C

7. What should you apply to a fathometer reading to determine the depth of water?

   A. Subtract the draft of the vessel.
   B. Subtract the sea water correction.
   C. Add the draft of the vessel.
   D. Add the sea water correction.

   Correct answer: C

8. Which of the following statements is TRUE regarding automatic identification systems (AIS)?

   A. AIS will not provide information on another vessel if that vessel is indistinguishable in radar sea clutter.
   B. AIS can be relied upon as the sole means to determine risk of collision and safe speed.
   C. AIS is designed to replace ARPA, maneuvering boards, and visual bearings as a means to ascertain the risk of collision.
   D. AIS provides the other vessel's identity, type and navigational status regardless of visibility.

   Correct answer: D

9. When using GPS, how many theoretical position lines are required for a three-dimensional fix?

   A. 1
   B. 2
   C. 3
   D. 4

   Correct answer: D

10. You are underway in the North Sea on course 216°T when you sight a buoy bearing 021° relative. Under the IALA Buoyage System, you are in the best navigable water if the buoy has which of the following characteristics?

    A. Is horizontally banded yellow, black, yellow
    B. Has a double cone topmark with both points up
    C. Has a continuous very quick light
    D. Has a light characteristic of Q(6) + L Fl 15s

    Correct answer: D

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

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

    Correct answer: B

12. When entering from seaward, what does a buoy displaying a single-flashing red light indicate?

    A. A sharp turn in the channel to the right
    B. The starboard side of the channel
    C. A junction with the preferred channel to the left
    D. A wreck to be left on the vessel's port side

    Correct answer: B

13. The channel under a bridge is marked with lights of the lateral system. The centerline of the channel shall be marked on the bridge in which manner?

    A. A yellow light
    B. A flashing blue light
    C. An occulting white light
    D. Three fixed white lights

    Correct answer: C

14. You are approaching the first of two drawbridges that span a narrow channel. The second drawbridge is close to the first. Which signals should you sound?

    A. Sound the request-for-opening signal twice in succession to indicate you must pass through both bridges
    B. Sound the request-for-opening signal, pause for about 10 seconds, then sound two prolonged blasts.
    C. Sound the request-for-opening signal and, after the bridge acknowledges it, sound the request-for-opening signal for the second bridge.
    D. Sound the request-for-opening signal for the first bridge only, who will notify the second bridge of your approach

    Correct answer: C

15. Which is TRUE of an occulting light?

    A. There is only a partial eclipse of the light
    B. The period of darkness exceeds the period of light
    C. The periods of light and darkness are equal
    D. The period of light exceeds the period of darkness

    Correct answer: D

16. Which defines a light's luminous range?

    A. The maximum distance at which a light may be seen in clear weather
    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 average distance of visibility of the light
    D. The maximum distance at which a light may be seen under existing visibility conditions

    Correct answer: D

17. A general chart intended for coastwise navigation outside of outlying reefs can have which scale?

    A. 1:1,000,000
    B. not more than 1:25,000
    C. 1:50,000
    D. 1:200,000

    Correct answer: D

18. The shoreline shown on nautical charts of areas affected by large tidal fluctuations is usually the line of mean _____.

    A. low water
    B. tide level
    C. lower low water
    D. high water

    Correct answer: D

19. What is the name given to lines on a chart which connect points of equal magnetic variation?

    A. Magnetic latitudes
    B. Dip lines
    C. Isogonic lines
    D. Magnetic declinations

    Correct answer: C

20. In IALA Region B, entering from sea, how would a daymark on the port side of the channel be indicated on a chart?

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

    Correct answer: B

21. How can Northern Right Whales be identified?

    A. No dorsal fin on the back
    B. "V" shaped blow easily visible from ahead or behind
    C. Whitish patches of skin on top of the head
    D. All of the above

    Correct answer: D

22. When a buoy is in position only during a certain period of the year, where may the dates when the buoy is in position be found?

    A. Light List
    B. On the chart
    C. Notice to Mariners
    D. Coast Pilot

    Correct answer: A

23. How are you informed of defects or changes in aids to navigation?

    A. Local Notice to Mariners
    B. Weekly Notice to Mariners
    C. Marine Safety Information Website
    D. All of the above

    Correct answer: D

24. When changing from a compass course to a true course, which should you apply?

    A. Deviation only
    B. Both variation and deviation
    C. A correction for the direction of current set
    D. Variation only

    Correct answer: B

25. Which is TRUE concerning compass error?

    A. Compass error is equal to deviation minus variation
    B. Compass error is the difference between true and magnetic heading
    C. Compass error is the sum of variation and deviation
    D. Compass error is variation plus compass course

    Correct answer: C

26. Which would influence a magnetic compass?

    A. Radio
    B. Electrical wiring
    C. Iron pipe
    D. All of the above

    Correct answer: D

27. Your vessel is proceeding up a channel, and you see a pair of range lights that are in line ahead. The chart indicates that the direction of this pair of lights is 014°T, and the variation is 11°E. If the heading of your vessel at the time of the sighting is 009° per standard magnetic compass, what is the correct deviation?

    A. 5°E
    B. 5°W
    C. 6°E
    D. 6°W

    Correct answer: D

28. It is desirable that a vessel encountering hurricane or typhoon conditions sends weather reports to the closest meteorological service at which time interval?

    A. Every 6 hours
    B. Every 8 hours
    C. Every hour
    D. Every 3 hours

    Correct answer: D

29. How can you follow the approach of a dangerous cyclonic storm?

    A. Review the Coast Pilot or Sailing Directions
    B. By monitoring the change in the sea temperature
    C. Utilizing the National Weather Service Observing Handbook No.1, Marine Surface Observations
    D. By a newspaper, a weather map, a weather fax, or a weather forecast

    Correct answer: D

30. Which kind of conditions would you observe as the eye of a storm passes over your vessel's position?

    A. Flat calm seas, heavy rain, light winds, and high pressure
    B. Flat calm seas, heavy rain, light winds, and an extremely low barometer
    C. Huge waves approaching from all directions, clearing skies, light winds, and high pressure
    D. Huge waves approaching from all directions, clearing skies, light winds, and an extremely low barometer

    Correct answer: D

31. Which is the most important information to be obtained from a barometer?

    A. The weather indications printed on the dial (such as "cold, wet, etc.") under the pointer
    B. The present reading of the pressure, combined with the changes in pressure observed in the recent past
    C. The difference between the reading of the two pointers, which shows wind direction
    D. The last two figures of the reading of the pointer, such as .87, .76, or .92

    Correct answer: B

32. Weather systems in the middle latitudes generally travel in which direction?

    A. West to East
    B. North to South
    C. East to West
    D. Southeast to Northwest

    Correct answer: A

33. A tropical storm is a tropical cyclone that generates winds of which speed?

    A. Between 34 and 63 knots
    B. Between 20 and 33 knots
    C. Between 64 and 75 knots
    D. Over 75 knots

    Correct answer: A

34. What will a veering wind do?

    A. Circulate about a low-pressure center in a counterclockwise manner in the Northern Hemisphere
    B. Change direction in a clockwise manner in the Northern Hemisphere
    C. Vary in strength constantly and unpredictably
    D. Circulate about a high-pressure center in a clockwise manner in the Southern Hemisphere

    Correct answer: B

35. 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

    Correct answer: B

36. What do clear skies, with the exception of a few cumulus clouds indicate?

    A. Hurricane weather
    B. Fog setting in
    C. Rain expected
    D. Fair weather

    Correct answer: D

37. Fog generally clears when the _____.

    A. temperature increases
    B. wind direction changes
    C. wind speed increases
    D. All of the above

    Correct answer: D

38. On a working copy of a weather map, a cold front is represented by what color line?

    A. Red
    B. Purple
    C. Alternating red and blue
    D. Blue

    Correct answer: D

39. Brief, violent showers frequently accompanied by thunder and lightning are usually associated with _____.

    A. passage of a warm front
    B. winds shifting counterclockwise in the Northern Hemisphere
    C. stationary high-pressure systems
    D. passage of a cold front

    Correct answer: D

40. If you observe a rapid fall of barometric pressure, which action should you take?

    A. Know that the barometer is not working properly
    B. Call the Coast Guard to verify the change
    C. Prepare for an onset of stormy weather with strong winds
    D. Contact the NWS or a local radio station

    Correct answer: C

41. Which is TRUE as the temperature for a given mass of air increases?

    A. The dew point increases
    B. The dew point decreases
    C. The relative humidity increases
    D. The relative humidity decreases

    Correct answer: D

42. Which current is responsible for the movement of large quantities of ice into the North Atlantic shipping lanes?

    A. Labrador Current
    B. Baltic Current
    C. Baffin Current
    D. Iceland Current

    Correct answer: A

43. Which term is used to define the point where the vertical rise or fall of tide has stopped?

    A. The reverse of the tide
    B. The stand of the tide
    C. The rip tide
    D. Slack water

    Correct answer: B

44. Which describes a line of position derived by radar range from an identified point on a coast?

    A. Straight line
    B. A line parallel to the coast
    C. Arc
    D. Parabola

    Correct answer: C

45. When using a buoy as an aid to navigation which of the following should be considered?

    A. The buoy should be considered to always be in the charted position.
    B. The buoy may not be in the charted position.
    C. If the light is flashing the buoy should be considered to be in the charted location.
    D. The buoy should be considered to be in the charted position if it has been freshly painted.

    Correct answer: B

46. The direction in which a vessel should be steered between two points is known by which term?

    A. Heading
    B. Course over the ground
    C. Bearing
    D. Course

    Correct answer: D

47. You are steering a southerly course, and you note that the chart predicts an easterly current. Without considering wind, how may you allow for the set?

    A. Head your vessel slightly to the right
    B. Decrease your speed
    C. Head your vessel slightly to the left
    D. Increase your speed

    Correct answer: A

48. Discounting slip, if your vessel is turning RPM for 10 knots and making good a speed of 10 knots, which is TRUE of the current?

    A. It is against you at 10 knots
    B. It is with you at 2 knots
    C. It is with you at 10 knots
    D. It is slack

    Correct answer: D

49. On 10 November 2023 at 0630, you are inbound at Charleston Harbor Entrance Buoy "10"(ACT6611). Your vessel will transit 15nm and make good 12.5 knots to a berth where the nearest tidal current station is ACT6706. What will be the direction and velocity of the current as you approach the dock? See illustration D058NG.

    A. 1.3kts at 335°T
    B. 0.4kts at 104°T
    C. 1.8kts at 172°T
    D. 1.3kts at 172°T

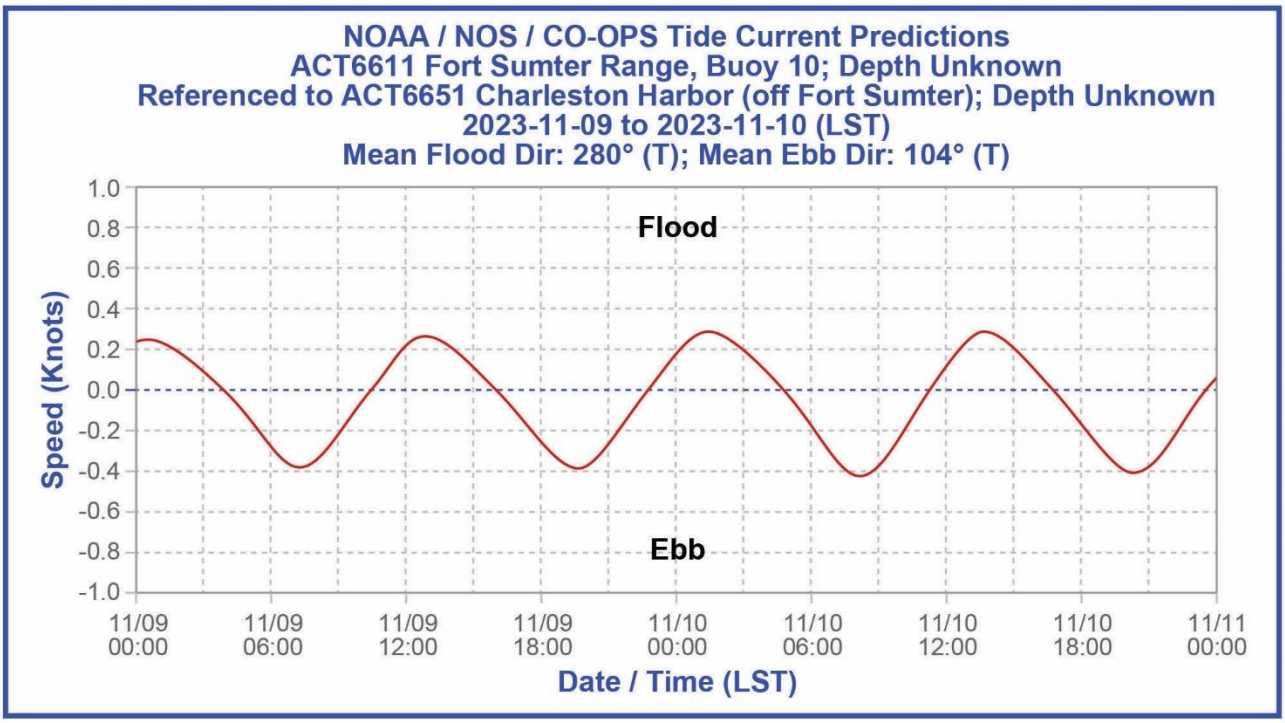
    Correct answer: D

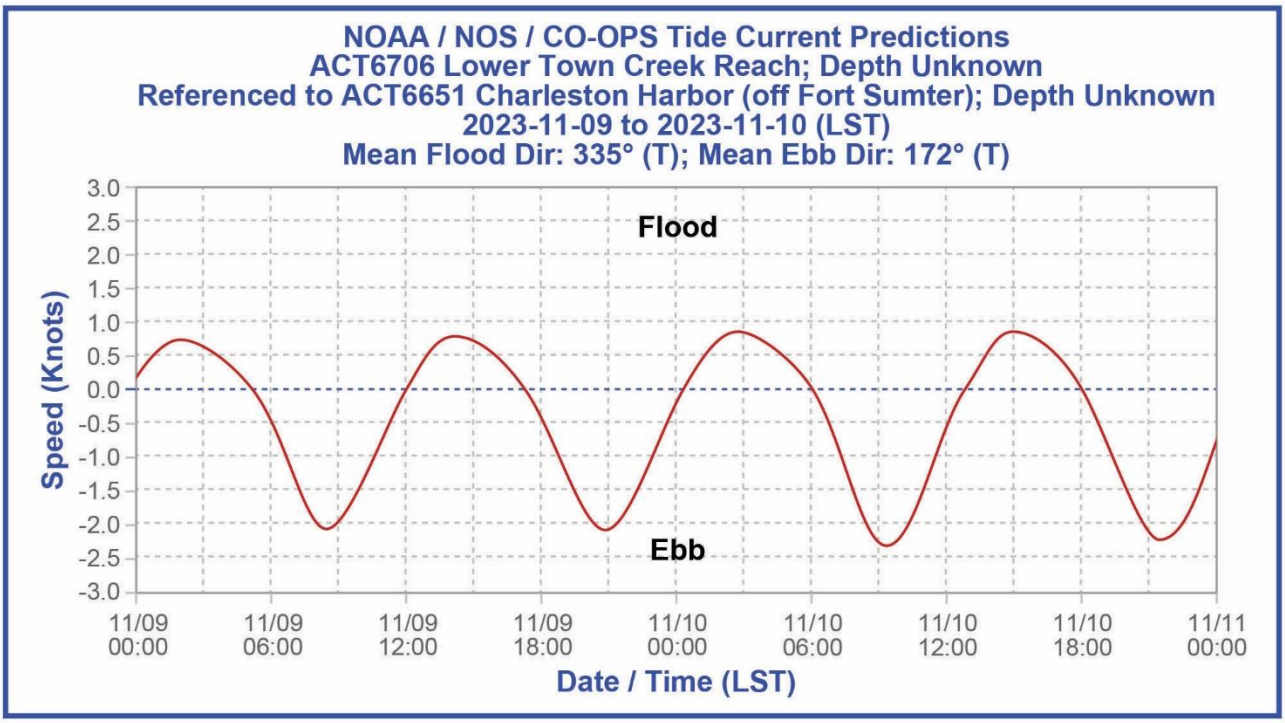
50. On 14 October 2023, you will be docking at the Southern Branch Elizabeth River, VA at the second low tide. The berth is located between NOAA reference tidal station #8638660 and subordinate station #8639348. What time (LST) will you be docking? See illustration D063NG.

    A. 1459
    B. 1559
    C. 1458
    D. 1500

    Correct answer: A

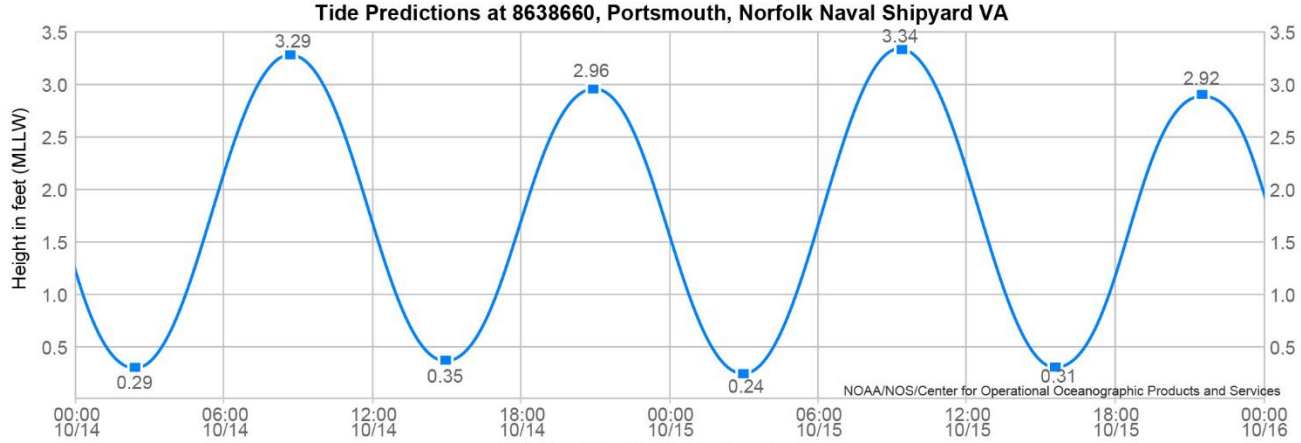
D058NG





D063NG

NOAA/NOS/CO-OPS
Tide Predictions at 8638660, Portsmouth, Norfolk Naval Shipyard VA



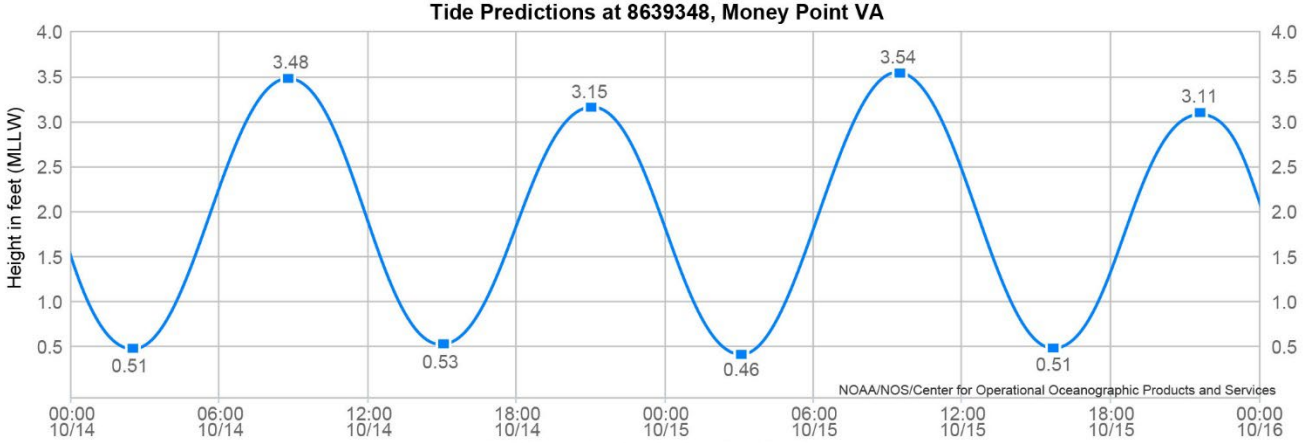
High/Low Tide Prediction Data Listing

Station Name: Portsmouth, Norfolk Naval Shipyard, VA
Action: Daily
Product: Tide Predictions
Start Date & Time: 2023/10/14 00:00
End Date & Time: 2023/10/15 23:59

Source: NOAA/NOS/CO-OPS
Prediction Type: Harmonic
Datum: MLLW
Height Units: Feet
Time Zone: LST

Date	Day	Time	Hgt	Time	Hgt	Time	Hgt	Time	Hgt
2023/10/14	Sat	02:25	0.29 L	08:40	3.29 H	14:58	0.35 L	20:53	2.96 H
2023/10/15	Sun	03:00	0.24 L	09:17	3.34 H	15:37	0.31 L	21:32	2.92 H

NOAA/NOS/CO-OPS
Tide Predictions at 8639348, Money Point VA



High/Low Tide Prediction Data Listing

Station Name: Money Point, VA
Action: Daily
Product: Tide Predictions
Start Date & Time: 2023/10/14 00:00
End Date & Time: 2023/10/15 23:59

Source: NOAA/NOS/CO-OPS
Prediction Type: Harmonic
Datum: MLLW
Height Units: Feet
Time Zone: LST

Date	Day	Time	Hgt	Time	Hgt	Time	Hgt	Time	Hgt
2023/10/14	Sat	02:25	0.51 L	08:48	3.48 H	15:00	0.53 L	21:02	3.15 H
2023/10/15	Sun	03:01	0.46 L	09:25	3.54 H	15:40	0.51 L	21:40	3.11 H

Note: The interval is High/Low, the solid blue line depicts a curve fit between the high and low values and approximates the segments between.
Disclaimer: These data are based upon the latest information available as of the date of your request, and may differ from the published tide tables.