U.S.C.G. Merchant Marine Exam

Master or Mate Less than 200 Gross Registered Tons

Q154 Navigation Problems – Oceans

(Sample Examination)

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

1.  On 26 September your 0830 zone time DR position is LAT 23°04.0'N, LONG 129°16.0'E. Your vessel is on course 119°T at a speed of 20.0 knots. What is the zone time of local apparent noon (LAN)?

    A.  1158
    B.  1205
    C.  1210
    D.  1214

    Correct answer: C

2.  On 7 November your 0830 zone time fix gives you a position of LAT 27°36.0'N, LONG 162°19.0'W. Your vessel is on course 289°T and your speed is 19.0 knots. Local apparent noon (LAN) occurs at 1138 zone time, at which time a meridian altitude of the Sun's lower limb is observed. The observed altitude (Ho) for this sight is 45°35.0'. What is the latitude at 1200 ZT?

    A.  27°55.1'N
    B.  27°57.2'N
    C.  27°59.5'N
    D.  28°01.9'N

    Correct answer: C

3.  You have steamed 525 miles at 16.0 knots and consumed 105 tons of fuel. If you have 308 tons of usable fuel remaining, how far can you steam at 19 knots?

    A.  2172 miles
    B.  1297 miles
    C.  1092 miles
    D.  920 miles

    Correct answer: C

4.  On 18 October your 1330 ZT DR position is LAT 27°32.0'N, LONG 154°47.0'W. You are on course 115°T at a speed of 20 knots. What will be the zone time of sunset at your vessel?

    A.  1715
    B.  1729
    C.  1742
    D.  1751

    Correct answer: C

5.  You depart LAT 49°45.0'N, LONG 06°35.0'W, and steam 3599 miles on course 246.5°T. What is the longitude of your arrival by Mercator sailing?

    A.  LONG 77°02.8'W
    B.  LONG 78°22.6'W
    C.  LONG 78°14.0'W
    D.  LONG 76°36.2'W

    Correct answer: A

6. At 0600 zone time, on 16 March your DR position is LAT 20°10.0'N, LONG 81°30.0'W. You are steering course 300°T. The speed over the ground is 10 knots. You observed 3 morning sun lines. Determine the latitude and longitude of your 1130 running fix.

   A. LAT 20°28.5'N, LONG 82°12.6'W
   B. LAT 20°32.0'N, LONG 82°16.4'W
   C. LAT 20°39.0'N, LONG 82°22.9'W
   D. LAT 20°42.5'N, LONG 82°26.2'W

   Correct answer: C

7. On 12 March your 1846 zone time DR position is LONG 129°16.5'W. At that time, you observe Polaris with a sextant altitude (hs) of 28°01.5'. The chronometer time of the sight is 03h 44m 10s, and the chronometer error is 01m 55s slow. The index error is 2.2' off the arc, and the height of eye is 59.8 feet (18.2 m). What is your latitude by Polaris?

   A. 27°33.7'N
   B. 27°40.9'N
   C. 27°54.4'N
   D. 28°06.9'N

   Correct answer: A

8. While steering a course of 150°T, you wish to observe a body for a latitude check. What would the azimuth have to be?

   A. 090°T
   B. 240°T
   C. 000°T
   D. 150°T

   Correct answer: C

9. A ship is in longitude 54°00'W on a true course of 270°. The ship's clocks are on the proper time zone. At what longitude should the clocks be changed to maintain the proper zone time?

   A. 45°00'W
   B. 52°30'W
   C. 60°00'W
   D. 67°30'W

   Correct answer: D

10. Determine the great circle distance and initial course from LAT 35°08.0'S, LONG 19°26.0'E to LAT 33°16.0'S, LONG 115°36.0'E.

    A. 4559 miles, 121°T
    B. 4682 miles, 059°T
    C. 4688 miles, 126°T
    D. 4457 miles, 126°T

    Correct answer: A