U.S.C.G. Merchant Marine Exam

Master Uninspected Fishing Vessels

Q186 Navigation Problems – Oceans

(Sample Examination)

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

1. Determine the great circle distance and initial course from LAT 08°36.0'N, LONG 126°17.0'E to LAT 02°12.0'S, LONG 81°53.0'W.

   A. 9105 miles, 079°T
   B. 9015 miles, 067°T
   C. 9076 miles, 067°T
   D. 9076 miles, 079°T

   Correct answer: D

2. On 3 May your 1009 zone time DR position is LAT 30°01.0'N, LONG 123°15.0'W. Your vessel is on course 330°T at a speed of 8.6 knots. What is the zone time of local apparent noon (LAN)?

   A. 1206
   B. 1208
   C. 1211
   D. 1214

   Correct answer: C

3. On 13 August your 0345 ZT DR position is LAT 21°35.0'N, LONG 135°26.0'W. You are on course 052°T at a speed of 14 knots. What will be the zone time of sunrise at your vessel?

   A. 0443
   B. 0449
   C. 0536
   D. 0540

   Correct answer: C

4. 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

   Correct answer: B

5. Your vessel receives a distress call from a vessel reporting her position as LAT 35°01.0'S, LONG 18°51.0'W. Your position is LAT 35°01.0'S, LONG 21°42.0'W. Determine the true course and distance from your vessel to the vessel in distress by parallel sailing.

   A. 090°T, 140.0 miles
   B. 090°T, 189.2 miles
   C. 270°T, 140.0 miles
   D. 270°T, 189.2 miles

   Correct answer: A

6. On 5 May at 1953 zone time, you take a sextant observation of Polaris. Your vessel's DR position is LAT 29°30.0'N, LONG 66°25.7'W, and your sextant reads 29°07.2'. Your chronometer reads 11h 51m 45s, and your chronometer error is 01m 36s slow. Your height of eye is 56 feet, and the index error for your sextant is 1.5' on the arc. What is the latitude of your vessel from your observation of Polaris?

   A. 29°14.3'N
   B. 29°23.6'N
   C. 29°32.3'N
   D. 29°38.8'N

   Correct answer: B

7. On 15 July your vessel is enroute from Portland, OR, to Singapore, Malaysia. You are steering course 243°T and making a speed of 16 knots. Your 1845 zone time DR is LAT 27°42.0'N, LONG 167°02.0'E. You observed 3 celestial bodies. Determine the latitude and longitude of your 1945 running fix.

NP-0016

BODY	ZONE TIME	GHA	OBSERVED ALTITUDE (Ho)	DECLINATION
Deneb	1905	104°08.0'	19°52.4'	N 45°12.8'
Antares	1924	172°02.1'	32°22.1'	S 26°23.5'
Denebola	1945	247°20.6'	38°22.3'	N 14°40.7'

   A. LAT 27°31.1'N, LONG 166°43.0'E
   B. LAT 27°38.5'N, LONG 166°45.1'E
   C. LAT 27°45.3'N, LONG 166°32.2'E
   D. LAT 28°18.1'N, LONG 166°39.8'E

   Correct answer: A

8. On 21 April your 1542 zone time DR position is LAT 28°54.0'S, LONG 19°07.0'W.

   At that time, you observe the Sun bearing 299°psc.
   The chronometer reads 04h 44m 11s, and the chronometer error is 01m 54s fast.
   The variation is 3°E.

   What is the deviation of the standard compass?

   A. 0.3°W
   B. 0.4°E
   C. 2.7°W
   D. 2.7°E

   Correct answer: A

9. On 28 July your 0800 zone time (ZT) fix gives you a position of LAT 25°16.0'N, LONG 71°19.0'W. Your vessel is on course 026°T, and your speed is 17.5 knots. Local apparent noon (LAN) occurs at 1150 ZT, at which time a meridian altitude of the Sun's lower limb is observed. The observed altitude (Ho) for this sight is 82°28.7'. What is the latitude at 1200 ZT?

   A. 26°25.0'N
   B. 26°27.6'N
   C. 26°29.8'N
   D. 26°32.0'N

   Correct answer: B

10. On 22 March your 1834 ZT DR position is LAT 26°13.5' S, LONG 108°36.5' W. You observe an unidentified star bearing 077°T, at an observed altitude (Ho) of 43°10.5'. The chronometer reads 01h 32m 37s and is 01m 50s slow. What star did you observe?

    A. Regulus
    B. Menkar
    C. Rigel
    D. Alphard

    Correct answer: D