

U.S.C.G. Merchant Marine Exam
Mate Uninspected Fishing Vessels
Q194 Navigation Problems – Oceans
(Sample Examination)

Choose the best answer to the following Multiple Choice Questions.

1. On 20 November your 0612 zone time (ZT) position was LAT $25^{\circ}38.0'N$, LONG $166^{\circ}54.0'W$. Your vessel was steaming on course $126^{\circ}T$ at a speed of 20.0 knots. An observation of the Sun's lower limb was made at 0854 ZT. The chronometer read 07h 51m 14s and was slow 02m 52s. The observed altitude (H_o) was $27^{\circ}58.3'$. LAN occurred at 1147 ZT. The observed altitude (H_o) was $45^{\circ}35.0'$. What was the longitude of your 1147 ZT running fix?

- (A) $165^{\circ}20.2'W$
- (B) $165^{\circ}18.4'W$
- (C) $165^{\circ}15.8'W$
- (D) $165^{\circ}12.5'W$

If choice D is selected set score to 1.

2. On 20 July your vessel's 1626 zone time DR position is LAT $27^{\circ}13.0'N$, LONG $63^{\circ}42.0'W$, when you take an azimuth of the Sun. Determine the gyro error using the azimuth information.
Chronometer time: 08h 24m 18s
Chronometer error: slow 02m 12s
Gyro bearing: 279.3°
Variation: $15^{\circ}W$

- (A) $1.9^{\circ}W$
- (B) $2.6^{\circ}W$
- (C) $1.4^{\circ}E$
- (D) $2.6^{\circ}E$

If choice A is selected set score to 1.

3. At 0915 zone time on 7 November you depart Seattle, LAT $47^{\circ}36.0'N$, LONG $122^{\circ}22.0'W$, (ZD +8). You are bound for Kobe, LAT $34^{\circ}40.0'N$, LONG $135^{\circ}12.0'E$, and you estimate your speed of advance at 18.5 knots. The distance is 4,527 miles. What is your estimated zone time of arrival at Kobe?

- (A) 1257, 17 November
- (B) 0657, 18 November
- (C) 1857, 18 November
- (D) 0657, 19 November

If choice B is selected set score to 1.

4. On Sunday, 8 November, your ship is enroute from Texas City, TX, to Portland, ME. At 0632 ZT, you fix your position at LAT $27^{\circ}06'N$, LONG $90^{\circ}36'W$. When the lower limb of the Sun was two-thirds of a diameter above the visible horizon, the Sun bore 105° per standard magnetic compass. At this time the chronometer read 12h 39m 20s and is 3m 20s slow. If the variation is $3^{\circ}E$, determine the deviation of the standard compass.
- (A) $0.8^{\circ}E$
 - (B) $0.8^{\circ}W$
 - (C) $3.8^{\circ}E$
 - (D) $3.8^{\circ}W$

If choice A is selected set score to 1.

5. On 16 February your 1845 ZT DR position is LAT $25^{\circ}50.5' N$, LONG $46^{\circ}24.0' W$. At that time you observe Polaris with a sextant altitude (hs) of $26^{\circ}25.5'$. The chronometer time of the sight is 09h 47m 30s and the chronometer error is 02m 16s fast. The index error is 2.5' off the arc, and the height of eye is 55.0 feet. What is your latitude by Polaris?
- (A) $25^{\circ}38.0'N$
 - (B) $25^{\circ}44.2'N$
 - (C) $26^{\circ}00.1'N$
 - (D) $26^{\circ}37.5'N$

If choice A is selected set score to 1.

6. On 13 October your 0515 zone time fix gives you a position of LAT $26^{\circ}53.0'N$, LONG $90^{\circ}05.0'W$. Your vessel is on course $068^{\circ}T$, and your speed is 7.8 knots. Local apparent noon (LAN) occurs at 1145 zone time, at which time a meridian altitude of the Sun's lower limb is observed. The observed altitude (Ho) for this sight is $54^{\circ}51.5'$. What is the latitude at 1200 ZT?
- (A) $27^{\circ}13.3'N$
 - (B) $27^{\circ}14.6'N$
 - (C) $27^{\circ}15.7'N$
 - (D) $27^{\circ}16.8'N$

If choice A is selected set score to 1.

7. Determine the great circle distance and initial course from LAT $35^{\circ}27.0'N$, LONG $140^{\circ}20.5'E$ to LAT $47^{\circ}51.0'N$, LONG $122^{\circ}51.0'W$.
- (A) 4122 miles, $076^{\circ}T$
 - (B) 4136 miles, $076^{\circ}T$
 - (C) 4087 miles, $036^{\circ}T$
 - (D) 4115 miles, $045^{\circ}T$

If choice D is selected set score to 1.

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8. On 20 June your 0800 zone time DR position is LAT $21^{\circ}02.0'N$, LONG $152^{\circ}50.0'E$. Your vessel is on course $265^{\circ}T$ at a speed of 15.0 knots. What is the zone time of local apparent noon (LAN)?
- (A) 1149
 - (B) 1154
 - (C) 1159
 - (D) 1203

If choice B is selected set score to 1.

9. On 17 April your vessel is enroute from the Panama Canal to Kobe, Japan. Your 0400 zone time DR position is LAT $26^{\circ}12.0'N$, LONG $126^{\circ}12.0'W$. Your vessel is on course $285^{\circ}T$ at a speed of 18 knots. What will be the zone time of sunrise at your vessel?
- (A) 0535
 - (B) 0541
 - (C) 0552
 - (D) 0602

If choice D is selected set score to 1.

10. You depart LAT $26^{\circ}03'S$, LONG $10^{\circ}28'E$, for LAT $26^{\circ}03'S$, LONG $01^{\circ}16'W$. What are the course and distance by parallel sailing?
- (A) $090^{\circ}T$, 547.2 miles
 - (B) $090^{\circ}T$, 632.5 miles
 - (C) $270^{\circ}T$, 547.2 miles
 - (D) $270^{\circ}T$, 632.5 miles

If choice D is selected set score to 1.