

U.S.C.G. Merchant Marine Exam
Master/Chief Mate of Unlimited Tonnage
Q108 Navigation Problems – Near Coastal
(Sample Examination)

Choose the best answer to the following Multiple Choice questions.

1. Your vessel arrives in port with sufficient fuel to steam 595 miles at 14 knots. If you are unable to take on bunkers, at what speed must you proceed to reach your next port, 707 miles distant?
- (A) 12.5 knots
 - (B) 12.8 knots
 - (C) 14.4 knots
 - (D) 12.2 knots

If choice B is selected set score to 1.

2. You are steering 154° pgc. The wind is southwest causing 4° leeway. The gyro error is 3° E, variation is 11° W and deviation is 7° E. What is the true course made good?
- (A) 164° T
 - (B) 153° T
 - (C) 161° T
 - (D) 158° T

If choice B is selected set score to 1.

3. A vessel at LAT $38^{\circ}36'N$, LONG $11^{\circ}36'W$, heads for a destination at LAT $24^{\circ}16'N$, LONG $71^{\circ}52'W$. Determine the true course and distance by Mercator sailing.
- (A) 254.4° T, 3,203.6 miles
 - (B) 254.4° T, 2,916.9 miles
 - (C) 285.6° T, 3,203.6 miles
 - (D) 236.4° T, 2,916.9 miles

If choice A is selected set score to 1.

4. Your vessel has a draft of 24 feet. On 7 April 1983 you wish to pass over a temporary obstruction near Lovell Island, MA, that has a charted depth of 22 feet. Allowing for a safety margin of 3.1 feet under your keel, what is the earliest time after 0100 EST (ZD +5) that this passage can be made?
- (A) 0248
 - (B) 0304
 - (C) 0342
 - (D) 0356

If choice C is selected set score to 1.

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5. You are taking a time tick using the 2000 signal from Kekaha-Kauai, Hawaii (WWVH). You hear a series of 1 second dashes followed by a 9 second silent period, then a long 1.3 second dash. At the beginning of the long dash, your comparing watch reads 08h 00m 08s. When compared to the chronometer, the comparing watch reads 08h 01m 15s, and the chronometer reads 07h 59m 55s. What is the chronometer error?
- (A) 1m 28s slow
 - (B) 0m 08s fast
 - (C) 1m 07s fast
 - (D) 1m 12s slow

If choice D is selected set score to 1.

6. On 10 August 1983 you will dock near Days Point, Weehawken, on the Hudson River, at 1800 DST (ZD +4). The charted depth alongside the pier is 24 feet (7.3 meters). What will be the depth of water when you dock?
- (A) 23.5 feet (7.1 m)
 - (B) 23.9 feet (7.2 m)
 - (C) 24.9 feet (7.5 m)
 - (D) 26.3 feet (8.0 m)

If choice B is selected set score to 1.

7. On 11 January your 0450 ZT position is LAT 38°42'N, LONG 14°16'W. You observe Polaris bearing 358.5°pgc. At the time of the observation the helmsman noted that he was heading 160°pgc and 173°psc. The variation is 9°W. What is the deviation for that heading?
- (A) 1°E
 - (B) 1°W
 - (C) 3°W
 - (D) 13°W

If choice C is selected set score to 1.

8. At 1444 ZT on 28 July, in DR position LAT 40° 56.8' N, LONG 167° 12.4' E, you observe an amplitude of the Moon. The upper limb of the Moon is on the visible horizon and bears 299.3° psc. The variation is 1° E. What is the deviation?
- (A) 3.1°W
 - (B) 3.1°E
 - (C) 2.1°W
 - (D) 2.1°E

If choice A is selected set score to 1.

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9. You are turning 78 RPM, with a propeller pitch of 21 feet, and an estimated slip of -7%. What is the speed of advance?
- (A) 15.7 knots
 - (B) 17.3 knots
 - (C) 14.9 knots
 - (D) 17.8 knots

If choice B is selected set score to 1.

10. On 21 May at 0630 PDT, (ZD +7), your vessel takes departure at the San Francisco Sea Buoy, LAT 37°45.0'N, LONG 122°41.5'W, enroute to Kobe, LAT 33°52.0'N, LONG 135°00.0'E via great circle. The distance is 4,245 miles, and you estimate that you will average 14.0 knots. What will be your estimated zone time of arrival?
- (A) 0442, 2 June
 - (B) 1342, 2 June
 - (C) 0442, 3 June
 - (D) 1342, 3 June

If choice D is selected set score to 1.