

U.S.C.G. Merchant Marine Exam
Mate Offshore Supply Vessels
Q214 Navigation Problems - Near Coastal
(Sample Examination)

Choose the best answer to the following Multiple Choice questions.

1. You are taking a time tick using the 1930 signal from Rio de Janeiro, Brazil. You hear the preparatory signal "CQ DE PPE" repeated several times followed by a short dash (0.4 sec), 60 dots (0.1 sec each) and another short dash. At the beginning of the last dash, the comparing watch reads 07h 30m 08s. When compared to the chronometer, the comparing watch reads 07h 31m 48s, and the chronometer reads 07h 32m 16s. What is the chronometer error?

- (A) 0m 36s fast
- (B) 1m 40s slow
- (C) 0m 08s fast
- (D) 0m 28s slow

If choice A is selected set score to 1.

2. On 11 January your vessel's 0655 zone time DR position is LAT 24°30'N, LONG 122°02'W, when an amplitude of the Sun is observed. The Sun's center is on the celestial horizon and bears 101.0° per standard compass. Variation in the area is 11.6°E. The chronometer reads 02h 52m 48s and is 02m 12s slow. What is the deviation of the standard compass?

- (A) 1.4°W
- (B) 1.4°E
- (C) 4.6°W
- (D) 4.6°E

If choice B is selected set score to 1.

3. You are to sail from Elizabethport, NJ, on 22 May 1983 with a maximum draft of 28 feet. You will pass over an obstruction in the channel near Sandy Hook that has a charted depth of 27 feet. The steaming time from Elizabethport to the obstruction is 1h 40m. What is the earliest time (ZD +4) you can sail on the afternoon of 22 May and pass over the obstruction with 3 feet of clearance?

- (A) 1407
- (B) 1331
- (C) 1303
- (D) 1242

If choice A is selected set score to 1.

4. What will be the set of the rotary current at Nantucket Shoals at 1245 (ZD +5) 14 January 1983?

- (A) 125°
- (B) 015°
- (C) 162°
- (D) 225°

If choice A is selected set score to 1.

5. The propeller on a vessel has a diameter of 18.8 feet and a pitch of 21.4 feet. What would be the slip if the vessel cruised 378 miles in a 24 hour day (observed distance) at an average RPM of 76?
- (A) +1.9%
 - (B) -1.9%
 - (C) -4.7%
 - (D) +4.7%

If choice A is selected set score to 1.

6. A vessel steams 3312 miles on course 282°T from LAT 34°24'S, LONG 18°18'E. What is the latitude and longitude of the point of arrival by Mercator sailing?
- (A) LAT 22°42'S, LONG 43°14'W
 - (B) LAT 22°55'S, LONG 43°05'W
 - (C) LAT 22°39'S, LONG 43°17'W
 - (D) LAT 22°47'S, LONG 43°10'W

If choice B is selected set score to 1.

7. The propeller on a vessel has a diameter of 21.5 feet and a pitch of 24.5 feet. What would be the apparent slip if the vessel cruised 458 miles in a 23 hour day (observed distance) at an average RPM of 78?
- (A) -12.3%
 - (B) +12.3%
 - (C) +5.6%
 - (D) -5.6%

If choice D is selected set score to 1.

8. You swung ship and compared the magnetic compass against the gyro compass to find deviation. Gyro error is 2°E. The variation is 8°W. Find the deviation on a magnetic compass heading of 234°.

HEADING	HEADING	HEADING
<u>PSC-PGC</u>	<u>PSC-PGC</u>	<u>PSC-PGC</u>
358.5°-350°	122.5°-110°	239.5°-230°
030.5°-020°	152.0°-140°	269.0°-260°
061.5°-050°	181.0°-170°	298.0°-290°
092.0°-080°	210.0°-200°	327.5°-320°

- (A) 0.5°E
- (B) 1.0°W
- (C) 2.5°E
- (D) 2.5°W

If choice A is selected set score to 1.

9. You desire to make good a true course of 174° . The variation is 17°W , magnetic compass deviation is 4°W , and gyrocompass error is 4°E . A west-southwest wind produces a 4° leeway. What is the course to steer per standard magnetic compass to make the true course good?
- (A) 197°psc
 - (B) 195°psc
 - (C) 203°psc
 - (D) 199°psc

If choice D is selected set score to 1.

10. On 1 September your 1115 zone time DR position is LAT $25^\circ20.0'\text{N}$, LONG $28^\circ24.0'\text{W}$. At that time, you observe the Sun bearing 160.5°psc . The chronometer reads 01h 14m 58s, and the chronometer error is 01m 17s fast. The variation is 13.5°W . What is the deviation of the standard compass?

- (A) 11.0°E
- (B) 2.1°E
- (C) 4.1°E
- (D) 11.0°W

If choice B is selected set score to 1.