

U.S.C.G. Merchant Marine Exam  
Mate Uninspected Fishing Vessels  
Q193 Navigation Problems – Near Coastal  
(Sample Examination)

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

1. Your vessel has a draft of 23 feet. On 23 June 1983 you wish to pass over a temporary obstruction near Beaufort, SC, that has a charted depth of 22 feet. Allowing for a safety margin of 3 feet, what is the earliest time after 1600 DST (ZD +4) that this passage can be made?
- (A) 1750
  - (B) 1815
  - (C) 1855
  - (D) 1944

*If choice A is selected set score to 1.*

2. You desire to make good a true course of  $203^\circ$ . The variation is  $19^\circ\text{E}$ , magnetic compass deviation is  $2^\circ\text{W}$ , and gyrocompass error is  $1^\circ\text{E}$ . A westerly wind produces a  $3^\circ$  leeway. What is the course to steer per standard magnetic compass to make the true course good?
- (A)  $223^\circ\text{psc}$
  - (B)  $189^\circ\text{psc}$
  - (C)  $183^\circ\text{psc}$
  - (D)  $210^\circ\text{psc}$

*If choice B is selected set score to 1.*

3. You swung ship and compared the magnetic compass against the gyrocompass to find deviation. Gyro error is  $2^\circ\text{E}$ . The variation is  $8^\circ\text{W}$ . Find the deviation on a magnetic compass heading of  $234^\circ$ .

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

- (A)  $2.5^\circ\text{W}$
- (B)  $2.5^\circ\text{E}$
- (C)  $1.0^\circ\text{W}$
- (D)  $0.5^\circ\text{E}$

*If choice D is selected set score to 1.*

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4. You are on course 079°T, speed 11.2 knots. At 0904 you see a daymark bearing 078°T at a range of 4.6. If you change course at 0910 to leave the daymark abeam to starboard at 0.5 mile, at what time will the daymark be abeam?
- (A) 0928
  - (B) 0918
  - (C) 0935
  - (D) 0923

*If choice A is selected set score to 1.*

5. The wind at Frying Pan shoals has been north-northeasterly at an average velocity of 30 mph. The predicted set and drift of the rotary current are 355° at 0.8 knot. What current should you expect?
- (A) 279° at 1.0 knot
  - (B) 047° at 0.3 knot
  - (C) 325° at 0.7 knot
  - (D) 010° at 1.1 knots

*If choice C is selected set score to 1.*

6. What will be the velocity of the tidal current 6 miles south of Shoal Point, NY, at 1850 DST (ZD +4) on 9 July 1983?
- (A) 0.2 knot ebb
  - (B) 0.2 knot flood
  - (C) 1.2 knot ebb
  - (D) 1.4 knot flood

*If choice B is selected set score to 1.*

7. If the speed necessary for reaching port at a designated time is 23.7 knots and the pitch of the propeller is 20.8 feet, how many revolutions per minute will the shaft have to turn, assuming a 7% negative slip?
- (A) 116 RPM
  - (B) 124 RPM
  - (C) 112 RPM
  - (D) 108 RPM

*If choice D is selected set score to 1.*

8. Two beacons form a range in the direction of  $221.5^{\circ}T$ . The range is seen in line from your vessel bearing  $223^{\circ}$  per gyrocompass. The variation in the area is  $4^{\circ}E$ . What is the error of your gyrocompass?

- (A)  $1.5^{\circ}W$
- (B)  $2.5^{\circ}W$
- (C)  $5.5^{\circ}W$
- (D)  $2.5^{\circ}E$

*If choice A is selected set score to 1.*

9. You are taking a time tick using the 1200 signal from Valparaiso, Chile. 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 12h 00m 18s. When compared to the chronometer, the comparing watch reads 12h 01m 23s, and the chronometer reads 11h 59m 35s. What is the chronometer error?

- (A) 1m 05s fast
- (B) 0m 25s slow
- (C) 1m 30s slow
- (D) 0m 18s fast

*If choice C is selected set score to 1.*

10. You receive a distress call from a vessel reporting her position as LAT  $30^{\circ}21'N$ , LONG  $88^{\circ}34'W$ . Your position is LAT  $24^{\circ}30'N$ , LONG  $83^{\circ}00'W$ . Determine the true course and distance to the distress scene by Mercator sailing.

- (A)  $322^{\circ}T$ , 455 miles
- (B)  $320^{\circ}T$ , 460 miles
- (C)  $324^{\circ}T$ , 460 miles
- (D)  $317^{\circ}T$ , 470 miles

*If choice B is selected set score to 1.*