

U.S.C.G. Merchant Marine Exam
Master/Chief Mate Offshore Supply Vessels
Q206 Navigation Problems – Near Coastal
(Sample Examination)

Choose the best answer to the following Multiple-Choice Questions

1. On 4 October 2023, you will be docking at the Redwood Marine Terminal in Eureka, CA at the first low tide. The berth is located between NOAA reference tidal station #9418767 and subordinate station #9418801. What time (LST) will you be docking? Illustration D062NG
- A. 0841
 - B. 2150
 - C. 0836
 - D. 0828

Correct answer: C

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

Correct answer: D

3. You are on a voyage from Limoy, Costa Rica to Los Angeles, CA. The distance from departure to arrival is 3150 miles. The speed of advance is 14.0 knots. You estimate 24.0 hours for bunkering at Colon, and 12.0 hours for the Panama Canal transit. If you take departure at 1836 hours (ZD +6), 28 January, what is your ETA (ZD +8) at Los Angeles?
- A. 1736, 9 February
 - B. 1736, 8 February
 - C. 1336, 8 February
 - D. 0536, 8 February

Correct answer: C

4. On 15 July in DR position LAT $22^{\circ}19.0'N$, LONG $154^{\circ}37.0'W$, you observe an amplitude of the Sun. The Sun's center is on the visible horizon and bears $298^{\circ}psc$. The chronometer reads 04h 45m 19s and is 01m 56s slow. Variation in the area is $7.5^{\circ}W$. What is the deviation of the standard magnetic compass?
- A. $2.7^{\circ}W$
 - B. $3.0^{\circ}E$
 - C. $3.6^{\circ}W$
 - D. $3.9^{\circ}E$

Correct answer: B

5. If the pitch of the propeller is 22.4 feet, and the revolutions per day are 103,690, calculate the day's run allowing 9% positive slip.
- A. 321.7 miles
 - B. 382.0 miles
 - C. 416.4 miles
 - D. 347.6 miles

Correct answer: D

6. On 9 November 2023 at 0330, you are inbound at Charleston Harbor Entrance Buoy "10" (ACT6611). What is the direction and velocity of the current you are encountering as you pass Buoy "10"? Illustration D058NG
- A. 0.1kts at 104°T
 - B. 0.3kts at 172°T
 - C. 0.3kts at 335°T
 - D. 0.1kts at 280°T

Correct answer: D

7. While steaming at 16.5 knots, your vessel consumes 349 barrels of fuel oil per day. In order to reduce consumption to 189 barrels of fuel oil per day, what is the maximum speed the vessel can turn for?
- A. 14.6 knots
 - B. 15.4 knots
 - C. 13.5 knots
 - D. 12.1 knots

Correct answer: C

8. On 7 December your 0350 ZT position is LAT 35°42'N, LONG 17°38'E. You observe Polaris bearing 359.7°pgc. At the time of the observation the helmsman noted that he was heading 016°pgc and 014°psc. The variation is 1°E. What is the deviation for that heading?
- A. 0.3°E
 - B. 1.5°E
 - C. 0.3°W
 - D. 1.5°W

Correct answer: A

9. Your vessel is steering course 149°psc, variation for the area is 13°E, and deviation is 4°E. The wind is from the northeast, producing a 4° leeway. What true course are you making good?
- A. 170°T
 - B. 128°T
 - C. 162°T
 - D. 136°T

Correct answer: A

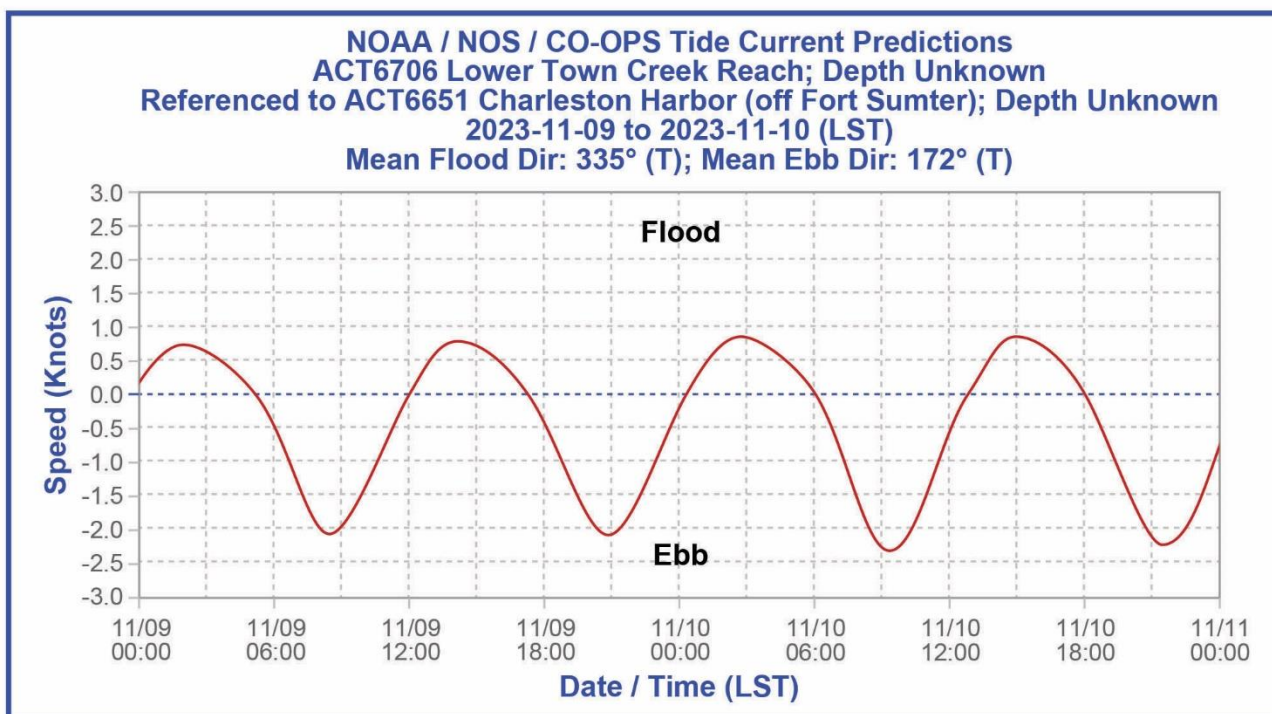
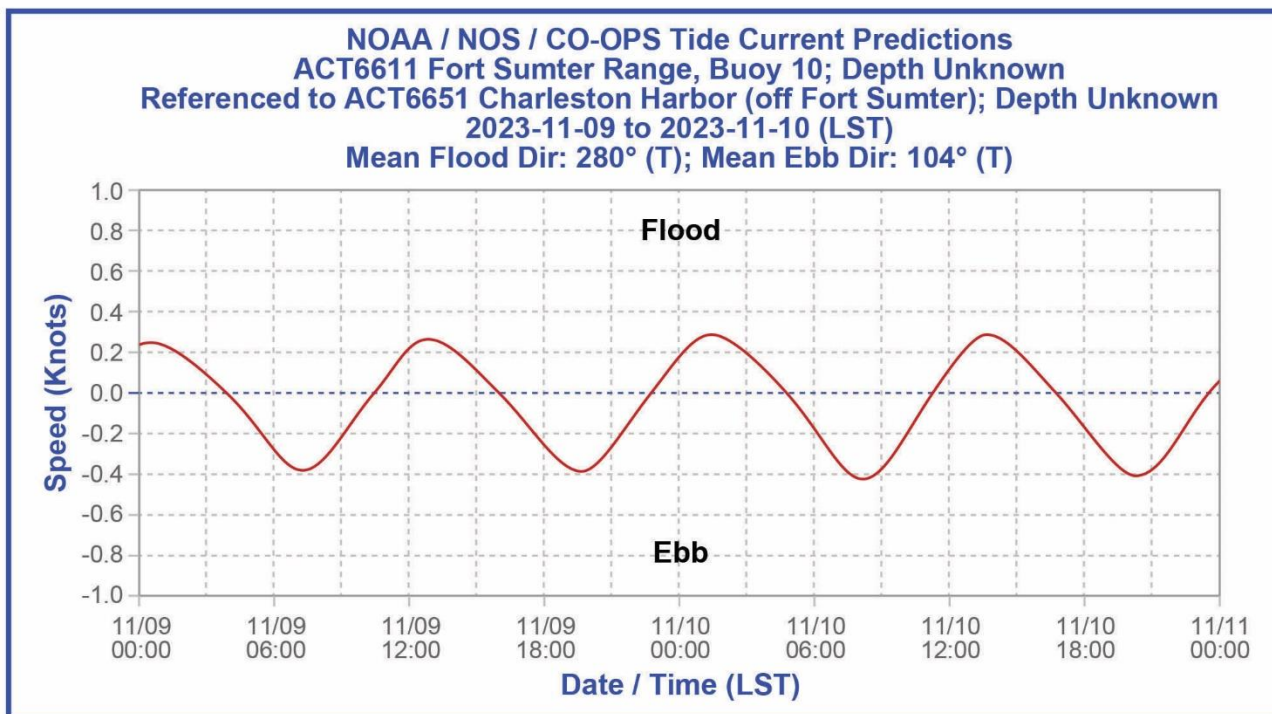
10. On 12 November, you are taking a time tick using the 1600 GMT BBC Broadcast. You hear five pulses followed by a longer pulse. At the start of the longer pulse you start a stopwatch. You stop the stopwatch at the same time reading the chronometer with the following results: stopwatch 03m 19s, chronometer 15h 59m 46s. What is the chronometer error?
- A. 01m 14s slow
 - B. 03m 33s slow
 - C. 06m 54s slow
 - D. 03m 19s fast

Correct answer: B

United States Coast Guard National Maritime Center



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(NOAA) Current Predictions,

<https://www.tidesandcurrents.noaa.gov>

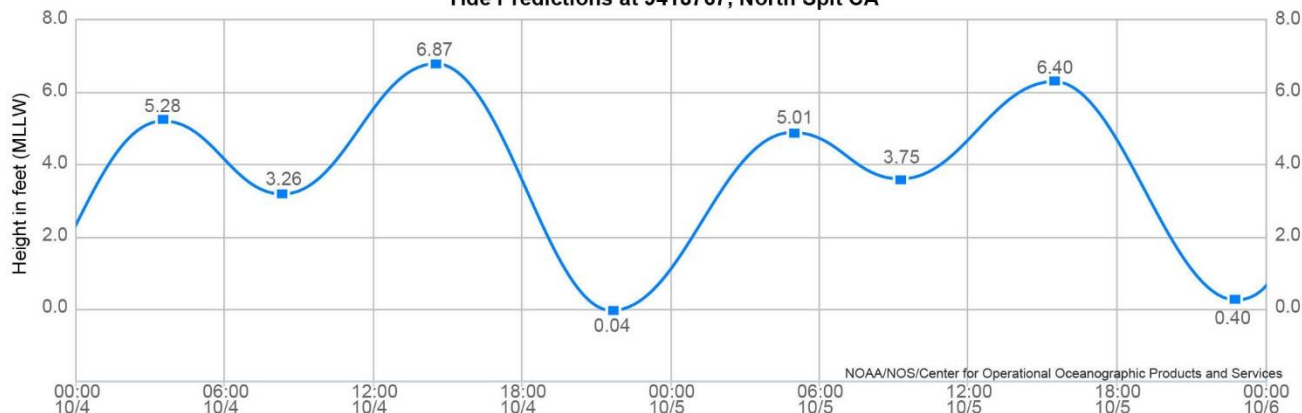
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NOAA/NOS/CO-OPS Tide Predictions at 9418767, North Spit CA



Station Name: North Spit, CA
Action: Daily
Product: Tide Predictions
Start Date & Time: 2023/10/4 00:00
End Date & Time: 2023/10/5 23:59

Source: NOAA/NOS/CO-OPS
Prediction Type: Harmonic
Datum: MLLW
Height Units: Feet
Time Zone: LST

High/Low Tide Prediction Data Listing

Date	Day	Time	Hgt	Time	Hgt	Time	Hgt	Time	Hgt
2023/10/04	Wed	03:38	5.28 H	08:28	3.26 L	14:33	6.87 H	21:47	0.04 L
2023/10/05	Thu	04:52	5.01 H	09:24	3.75 L	15:25	6.40 H	22:50	0.40 L

NOAA/NOS/CO-OPS Tide Predictions at 9418801, Eureka CA



Station Name: Eureka, CA
Action: Daily
Product: Tide Predictions
Start Date & Time: 2023/10/4 00:00
End Date & Time: 2023/10/5 23:59

Source: NOAA/NOS/CO-OPS
Prediction Type: Subordinate
Datum: MLLW
Height Units: Feet
Time Zone: LST

High/Low Tide Prediction Data Listing

Date	Day	Time	Hgt	Time	Hgt	Time	Hgt	Time	Hgt
2023/10/04	Wed	04:04	5.60 H	08:41	3.36 L	14:59	7.28 H	22:00	0.04 L
2023/10/05	Thu	05:18	5.31 H	09:37	3.86 L	15:51	6.78 H	23:03	0.41 L

Note: The interval is High/Low, the solid blue line depicts a curve fit between the high and low values and approximates the segments between.
Disclaimer: These data are based upon the latest information available as of the date of your request, and may differ from the published tide tables.

**Adapted for testing purposes only from National Oceanic and Atmospheric Administration
(NOAA) Tide Predictions,**

<https://www.tidesandcurrents.noaa.gov>

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