

U.S.C.G. Merchant Marine Exam
Master of Unlimited Tonnage
Q306 Great Lakes Topics
(Sample Examination)

Choose the best answer to the following Multiple Choice questions.

1. When making way in heavy seas you notice that your vessel's screw is being lifted clear of the water and racing. One way to correct this would be to _____.
- (A) move more weight forward
 - (B) increase speed
 - (C) shift the rudder back and forth several times
 - (D) decrease speed

If choice D is selected set score to 1.

2. Using the Guidance Manual for Loading M.V. Grand Haven, determine the amount of ballast required in tank No. 3 (P & S) to maintain drafts of 17'-00" forward and 22'-06" aft for a vessel loaded with grain which has a test weight of 37.6 lbs.
- (A) 930 tons each
 - (B) 955 tons each
 - (C) 975 tons each
 - (D) 990 tons each

If choice C is selected set score to 1.

3. In illustration D031DG below, what does the single line located directly above the diamond indicate?
- (A) freeboard line
 - (B) water line
 - (C) load line
 - (D) deck line

If choice D is selected set score to 1.

4. On 13 October your vessel's 1722 zone time DR position is LAT 27°36'S, LONG 136°16'E, when an amplitude of the Sun is observed. The Sun's center is on the celestial horizon and bears 266° per standard magnetic compass. Variation in the area is 2°W. The chronometer reads 08h 24m 19s and is 01m 43s fast. What is the deviation of the standard magnetic compass?
- (A) 2.8°W
 - (B) 2.3°E
 - (C) 6.8°W
 - (D) 4.8°E

If choice A is selected set score to 1.

5. On 14 January your 0746 zone time DR position is LAT 26°37.0'N, LONG 153°19.0'W. At that time, you observe the Sun bearing 123°psc. The chronometer reads 05h 49m 16s, and the chronometer error is 02m 29s fast. The variation is 3°W. What is the deviation of the standard magnetic compass?

- (A) 3.4°E
- (B) 4.4°W
- (C) 1.4°W
- (D) 1.6°E

If choice C is selected set score to 1.

6. For operations in pack ice, a vessel should _____.

- (A) be on an even keel
- (B) be ballasted so the forefoot is near the surface
- (C) have a drag of not more than 2 to 3 feet
- (D) be trimmed slightly by the head

If choice C is selected set score to 1.

7. As a rule, ships of most configurations, when drifting in calm water with negligible current, will lie _____.

- (A) stern to the wind
- (B) beam to the wind
- (C) with the wind on the quarter
- (D) bow to the wind

If choice B is selected set score to 1.

8. Which publication offers information on Great Lakes ice services?

- (A) Marine Weather Log
- (B) National Weather Service, Ice Outlooks
- (C) U.S. Coast Pilot #6
- (D) Light List volume VII

If choice C is selected set score to 1.

9. Leeway is the _____.

- (A) difference between the true course and the compass course
- (B) lateral movement of a vessel downwind of her intended course
- (C) displacement of a vessel multiplied by her speed
- (D) momentum of a vessel after her engines have been stopped

If choice B is selected set score to 1.

10. If the speed necessary for reaching port at a designated time is 21.6 knots and the pitch of the propeller is 22.5 feet, how many revolutions per minute will the shaft have to turn, assuming a 2% positive slip?

- (A) 95
- (B) 99
- (C) 81
- (D) 87

If choice B is selected set score to 1.

11. "Ice blink" is _____.

- (A) "water sky"
- (B) the yellowish-white glare on the underside of a cloud layer
- (C) the dark appearance of the underside of a cloud layer due to reflection of a surface of open water
- (D) the soft light appearance on the underside of a cloud layer due to reflection from a surface of open water

If choice B is selected set score to 1.

12. If the speed necessary for reaching port at a designated time is 19.2 knots and the pitch of the propeller is 22.7 feet, how many revolutions per minute will the shaft have to turn, assuming a 4% positive slip?

- (A) 103
- (B) 82
- (C) 89
- (D) 96

If choice C is selected set score to 1.

13. You have steamed 632 miles at 18.5 knots, and consumed 197 tons of fuel. If you have 278 tons of usable fuel remaining, how far can you steam at 15.0 knots?

- (A) 1357 miles
- (B) 681 miles
- (C) 892 miles
- (D) 1100 miles

If choice A is selected set score to 1.

14. You have steamed 746 miles at 14.0 knots, and consumed 152 tons of fuel. If you have 201 tons of usable fuel remaining, how far can you steam at 10 knots?

- (A) 2263 miles
- (B) 1381 miles
- (C) 1934 miles
- (D) 2707 miles

If choice C is selected set score to 1.

15. An icebreaker assisting a vessel through an ice field would display a visual signal consisting of the code letter "I" (India) to signify that "_____".

- (A) I am altering my course to starboard
- (B) I am operating astern propulsion
- (C) I am altering my course to port
- (D) My vessel is stopped and making no way through the water

If choice C is selected set score to 1.

16. Ice concentration is measured in tenths. What concentration range of ice corresponds to "Open Pack"?

- (A) < 1 tenth
- (B) 7 - 8 tenths
- (C) 1 - 3 tenths
- (D) 4 - 6 tenths

If choice D is selected set score to 1.

17. Who publishes the "Canadian List of Lights, Buoys and Fog Signals"?

- (A) The U.S. Hydrographic Service
- (B) The Canadian Coast Guard
- (C) The Canadian Hydrographic Service
- (D) The U.S. Coast Guard

If choice B is selected set score to 1.

18. On the Great Lakes, the term "controlling depth" means the _____.

- (A) designed dredging depth of a channel constructed by the Corps. of Engineers
- (B) least depth within the limits of the channel which restricts the navigation
- (C) minimum amount of tail water available behind a dam
- (D) distance in units of the chart (feet, meters or fathoms) from the reference datum to the bottom

If choice B is selected set score to 1.

19. Which of the Great Lakes generally has the shortest navigation season?

- (A) Lake Superior
- (B) Lake Michigan
- (C) Lake Erie
- (D) Lake Huron

If choice A is selected set score to 1.

20. On the Great Lakes, winter storms compound the ice threat by bringing a variety of wind, wave, and weather problems on an average of every _____.

- (A) four days
- (B) five days
- (C) two days
- (D) three days

If choice A is selected set score to 1.

21. Nearly half of all storms that enter the Great Lakes Basin during the period from October through May come from _____.

- (A) highs which originate in north eastern and eastern Canada
- (B) highs which originate in the east and east central USA
- (C) lows which originate in the central and western USA
- (D) lows which originate in north central and western Canada

If choice C is selected set score to 1.

22. Which type of fog is the most dense and widely spread of those that occur on the Great Lakes?

- (A) Radiation fog
- (B) Steam fog
- (C) Lake effect fog
- (D) Advection fog

If choice D is selected set score to 1.

23. The force exerted by a propeller which tends to throw the stern right or left is called _____.

- (A) rotational force
- (B) sidewise force
- (C) thrust
- (D) slip

If choice B is selected set score to 1.

24. Using sheet 25 in the Guidance Manual for Loading M.V. Grand Haven, determine the amount of ballast required in tank No. 5 (P & S) to maintain drafts of 17'-00" forward and 22'-06" aft for a vessel loaded with grain which has a test weight of 33 lbs.

- (A) 1010 tons each
- (B) 1025 tons each
- (C) 1045 tons each
- (D) 1070 tons each

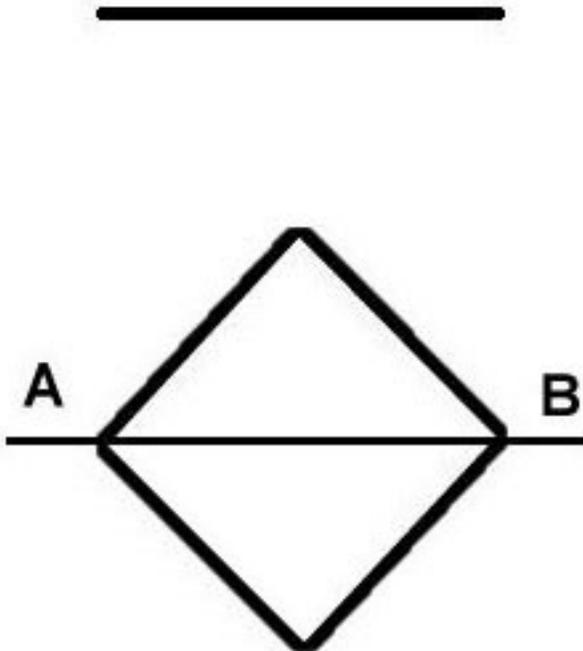
If choice D is selected set score to 1.

25. Your vessel is broken down and rolling in heavy seas. You can reduce the danger of capsizing by _____.

- (A) moving all passengers to the stern
- (B) moving all passengers to one side of the boat
- (C) rigging a sea anchor
- (D) constantly shifting the rudder

If choice C is selected set score to 1.

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