

U.S.C.G. Merchant Marine Exam  
Mate of Unlimited Tonnage  
Q312 Great Lakes Topics  
(Sample Examination)

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

1. 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.*

2. 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.*

3. The enclosed area defined as the intersection of the surface of the water and the hull of a vessel is the \_\_\_\_\_.
- (A) amidships plane
  - (B) longitudinal reference plane
  - (C) waterplane
  - (D) baseline

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

4. "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.*

5. 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.*

6. A negative metacentric height \_\_\_\_\_.

- (A) will always cause a vessel to capsize
- (B) should always be immediately corrected
- (C) always results from off-center weights
- (D) All of the above are correct

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

7. The term that indicates how many tons of cargo a vessel can carry is \_\_\_\_\_.

- (A) bale cubic
- (B) deadweight
- (C) loaded displacement
- (D) gross tonnage

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

8. The forward draft of your ship is 27'-11" and the after draft is 29'-03". The draft amidships is 28'-05". Your vessel is \_\_\_\_\_.

- (A) listed
- (B) hogged
- (C) sagged
- (D) trimmed by the head

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

9. 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.*

**10.** 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.*

**11.** The wooden planking that protects the tank top from cargo loading is called \_\_\_\_\_.

- (A) toms
- (B) ceiling
- (C) frames
- (D) shores

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

**12.** 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.*

**13.** 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.*

**14.** 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.*

**15.** The correction to KG for transverse free surface effects may be found by dividing the vessel's displacement into the \_\_\_\_\_.

- (A) sum of the transverse free surface moments of the vessel
- (B) sum of the vertical moments of the vessel
- (C) transverse baseline of the vessel
- (D) transverse free surface correction for the vessel

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

**16.** The ceiling is \_\_\_\_\_.

- (A) a wooden protection placed over the tank top
- (B) material driven into seams or cracks to prevent leaking
- (C) the overhead in berthing compartments
- (D) None of the above are correct

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

**17.** 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.*

**18.** 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.*

**19.** 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.*

**20.** 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.*

**21.** 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.*

**22.** 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.*

**23.** 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.*

**24.** Generally speaking, the more destructive storms occurring on the Great Lakes usually come from the \_\_\_\_\_.

- (A) northeast or east
- (B) northwest or north
- (C) southeast or south
- (D) southwest or west

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

**25.** 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.*