

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. What is the purpose of cant frames in steel vessels?
- A. To provide strength to shell plating at the stern
  - B. To support the plating of a cylindrical tank
  - C. To support the overhang of the stern
  - D. To add strength to the deck beams which support the weather decks

Correct answer: A

2. 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

Correct answer: D

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

Correct answer: A

4. An icebreaker assisting a vessel through an ice field would display a visual signal consisting of the code letter "M" (Mike). What does this signal signify?
- A. I am altering my course to starboard
  - B. I am operating astern propulsion
  - C. My vessel is stopped and making no way through the water
  - D. I am altering my course to port

Correct answer: C

5. You are transiting the Straits of Mackinac by way of an improved channel. You have information which indicates that the channel's Federal project depth is 28 ft. Which of the following statements is true with regards to this channel?
- A. The least depth within the limits of the channel is 28 ft.
  - B. The maximum depth which may be expected within the limits of the channel is 28 ft.
  - C. The design dredging depth of the channel is 28 ft.
  - D. The channel has 28 ft. in the center but lesser depths may exist in the remainder of the channel.

Correct answer: C

6. Shell plating is \_\_\_\_\_.

- A. the outer plating of a vessel
- B. synonymous with decking
- C. a hatch cover
- D. the galvanizing on steel

Correct answer: A

7. Your vessel is on a voyage from Ogdensburg, NY, to Chicago, IL, via the Great Lakes. The date is October 3 of the current year. If your vessel is subject to the load line requirements, using illustration D031DG below, to which of her marks should she be loaded?

- A. Salt water - Intermediate
- B. Fresh water - Intermediate
- C. Fresh water - Winter
- D. Salt water - Winter

Correct answer: B

8. Which action will affect the trim of a vessel?

- A. Adding weight at the tipping center
- B. Moving high weights lower
- C. Moving a weight forward
- D. Removing weight at the tipping center

Correct answer: C

9. Which of the Great Lakes experiences the least amount of water level fluctuation between seasonal high and low water marks?

- A. Lake Erie
- B. Lake Huron
- C. Lake Superior
- D. Lake Michigan

Correct answer: C

10. Which would be the BEST condition for your vessel to enter into pack ice?

- A. The vessel is on an even keel
- B. The vessel is trimmed slightly by the head
- C. The vessel is ballasted so the forefoot is near the surface
- D. The vessel has a drag of not more than 2 to 3 feet

Correct answer: D

11. Advection fog holds longest over which portions of the lakes?

- A. Southeast
- B. Northeast
- C. Northwest
- D. Southwest

Correct answer: C

**12.** As a rule, ships of most configurations, when drifting in calm water with negligible current, will lie in which orientation?

- A. The stern will be to the wind
- B. The beam will be to the wind
- C. The bow will be to the wind
- D. With the wind on the quarter

Correct answer: B

**13.** Which of the Great Lakes is generally the last to reach its seasonal low and seasonal high-water marks?

- A. Lake Huron
- B. Lake Superior
- C. Lake Michigan
- D. Lake Ontario

Correct answer: B

**14.** Your vessel is discharging containers from the main deck with the ship's cranes. Which of the following must be taken into account when calculating the center of gravity as the containers are discharged?

- A. The vertical distance from the main deck to the heel of the boom plus half the height of the container
- B. The vertical distance from the main deck plus half the height of the container
- C. The vertical distance from the main deck plus the height of the container
- D. The vertical distance from the main deck plus the vertical distance to the head of the boom

Correct answer: D

**15.** 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

Correct answer: C

**16.** Which is the prime function of the bilge keel?

- A. To reduce the rolling of the vessel
- B. To serve as the vessel's main strength member
- C. To protect the vessel's hull when alongside a dock
- D. To add strength to the bilge

Correct answer: A

**17.** Fog can form in any season on the Great Lakes, but it is most likely to occur over open waters in which period?

- A. Summer and early autumn
- B. Spring and early summer
- C. Autumn and early winter
- D. Winter and early spring

Correct answer: B

**18.** Which statement is TRUE concerning weather conditions on the Great Lakes?

- A. The most destructive storms usually come from the northwest or north.
- B. Thunderstorms are most likely to develop from November through April.
- C. When a vessel is south of an eastward-moving storm center, the approach of the low is evidenced by winds from the north to northeast.
- D. When a vessel is north of an eastward-moving storm center, changes in the weather are less distinctive than when sailing south of the center.

Correct answer: D

**19.** What is meant by the term "broaching to"?

- A. Running before a sea
- B. Having the vessel filled with water
- C. Having the vessel head toward the sea
- D. Being turned broadside to the sea

Correct answer: D

**20.** What does subtracting GM from KM yield?

- A. GM
- B. FS
- C. BL
- D. KG

Correct answer: D

**21.** Which describes nearly half of all storms that enter the Great Lakes Basin during the period from October through May?

- A. Highs which originate in northeastern and eastern Canada
- B. Lows which originate in the central and western USA
- C. Highs which originate in the east and east central USA
- D. Lows which originate in north central and western Canada

Correct answer: B

**22.** Which expresses the term leeway?

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

Correct answer: D

**23.** Your vessel rolls slowly and sluggishly. What does this indicate about the vessel?

- A. It has poor stability
- B. It is taking on water
- C. It has a greater draft forward than aft
- D. It has off-center weights

Correct answer: A

**24.** Which term defines when a boat turns broadside to heavy seas and winds, thus exposing the boat to the danger of capsizing?

- A. Yawed
- B. Trimmed
- C. Pitchpoled
- D. Broached

Correct answer: D

**25.** Which statement is TRUE with respect to shiphandling procedures in ice?

- A. The presence of a snow cover on the ice assists a vessel's progress through an ice field.
- B. Go astern in ice with extreme care - always with rudder amidships.
- C. Never go "full astern" at any time while in ice.
- D. Enter ice at medium speeds to reduce impact.

Correct answer: B



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