

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. In the illustration D041DG below, what does symbol 3 represent?

- A. Displacement
- B. Baseline
- C. Forward perpendicular
- D. Amidships

Correct answer: D

2. Assuming that the recommended hatch loading sequence is followed, how many long tons of iron ore may be loaded through hatch No. 20 while using a single belt loader to arrive at a desired mean keel draft of 29'-06"? (Use the Guidance Manual for Loading M.V. GRAND HAVEN.)

- A. 1550 tons
- B. 2920 tons
- C. 3010 tons
- D. 3515 tons

Correct answer: B

3. Which statement about the free surface effect is TRUE?

- A. The free surface effect usually increases at angles of heel above 25°.
- B. The effect can be reduced by shifting weights vertically.
- C. The effect increases if the tank is off the centerline.
- D. It has the same effect on initial stability whether the tank is 75% full or 25% full.

Correct answer: D

4. A vessel is loaded to her summer marks for a voyage from Montreal, Canada to Duluth, MN via the Great Lakes System. The voyage has been estimated to take nine (9) days. If the vessel departs Montreal on September 28th, which of the following statements is TRUE?

- A. The vessel must be at her winter marks by the evening of the third day.
- B. The vessel's intermediate load line marks may not be submerged after September 30.
- C. The vessel is in violation of the load line requirements.
- D. The vessel must be at her summer marks when she arrives at Duluth.

Correct answer: B

5. A vessel operating on the Great Lakes, and whose position is south of an eastward-moving storm center, would experience which condition?

- A. Fog
- B. A rising barometer
- C. A southeast to south wind
- D. High clouds

Correct answer: C

6. The correction to KG for transverse free surface effects may be found by dividing the vessel's displacement into the _____.
- A. transverse baseline of the vessel
 - B. sum of the transverse free surface moments of the vessel
 - C. sum of the vertical moments of the vessel
 - D. transverse free surface correction for the vessel

Correct answer: B

7. Assuming an even transverse distribution of weight in a vessel, which condition could cause a list?
- A. Empty double bottoms and lower holds, and a heavy deck cargo
 - B. Flooding the forepeak to correct the vessel's trim
 - C. Having a small positive righting arm
 - D. Having KG smaller than KM

Correct answer: A

8. Which statement about bilge keels is CORRECT?
- A. They provide support when the vessel is dry docked.
 - B. They attach to a low stress area.
 - C. They increase resistance to rolling.
 - D. They are critical strength members and require careful design consideration.

Correct answer: C

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

Correct answer: C

10. An icebreaker is displaying a flag hoist which consists of the code letters "WO" (Whiskey Oscar). What does this signal indicate?
- A. Icebreaker support is commencing
 - B. Icebreaker support is finished
 - C. The icebreaker is beset
 - D. The icebreaker is icebound

Correct answer: B

11. Fog can form in any season on the Great Lakes, but it is most likely to occur over open waters in which period?
- A. Winter and early spring
 - B. Summer and early autumn
 - C. Spring and early summer
 - D. Autumn and early winter

Correct answer: C

12. A channel is stated as having a controlling depth of 38 feet. Which statement is TRUE?

- A. 100% of the channel width is clear to 38 feet.
- B. The sides of the channel conform to at least 50% of the controlling depth.
- C. At least 50% of the channel is cleared to the charted depth.
- D. At least 80% of the channel is cleared to the charted depth.

Correct answer: A

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

Correct answer: D

14. When running before a heavy sea, what will moving weights aft on the vessel accomplish?

- A. Reduce the rolling of the vessel
- B. Reduce the yawing of the vessel
- C. Increase the rolling of the vessel
- D. Increase the yawing of the vessel

Correct answer: B

15. Which basic category of water level fluctuations on the Great Lakes is the most regular?

- A. Outflow fluctuations
- B. Long-term fluctuations
- C. Seasonal fluctuations
- D. Short-term fluctuations

Correct answer: C

16. What is the meaning of a flag hoist consisting of the code letters "WM" (Whiskey Mike) when displayed by an icebreaker?

- A. "You should stop your vessel instantly."
- B. "I am going ahead; follow me."
- C. "Icebreaker support is now commencing."
- D. "Icebreaker support is finished."

Correct answer: C

17. When the period of beam seas equals the natural rolling period of a vessel, what will most likely occur?

- A. Excessive pitching
- B. Excessive rolling
- C. Excessive yawing
- D. No change should be evident

Correct answer: B

18. Storms that enter the Great Lakes Basin from the west and northwest at a peak in October are the products of which pressure system?

- A. Northwesters
- B. Polar highs
- C. Alberta lows
- D. Fata morgana

Correct answer: C

19. Which is the vertical reference for all water levels and benchmarks on the Great Lakes - St. Lawrence River System?

- A. Mean Sea Level Datum
- B. Great Lakes Low Water Datum
- C. International Great Lakes Datum
- D. North Central Reference Datum

Correct answer: C

20. How are aids to navigation on the Great Lakes arranged geographically?

- A. In a westerly and northerly direction, except on Lake St. Clair
- B. In an easterly and southerly direction, except on the New York State Barge Canal
- C. In a westerly and northerly direction, except on Lake Michigan
- D. In an easterly and southerly direction, except on Lake Erie

Correct answer: C

21. What is the space above the engine room called?

- A. Noble
- B. Fidley
- C. Middle hatch
- D. Gold locker

Correct answer: B

22. Using 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 35 lbs.

- A. 785 tons each
- B. 820 tons each
- C. 880 tons each
- D. 900 tons each

Correct answer: C

23. What is NOT an indication that pack ice may be nearby?

- A. Sighting a walrus in the Arctic
- B. Absence of wave motion
- C. Ice blink
- D. The presence of icebergs

Correct answer: D

24. Which term defines "An electronic or electric device that indicates the rate of turn of a vessel"?

- A. Odometer
- B. Magnetic compass
- C. Gyrocompass
- D. Swing meter

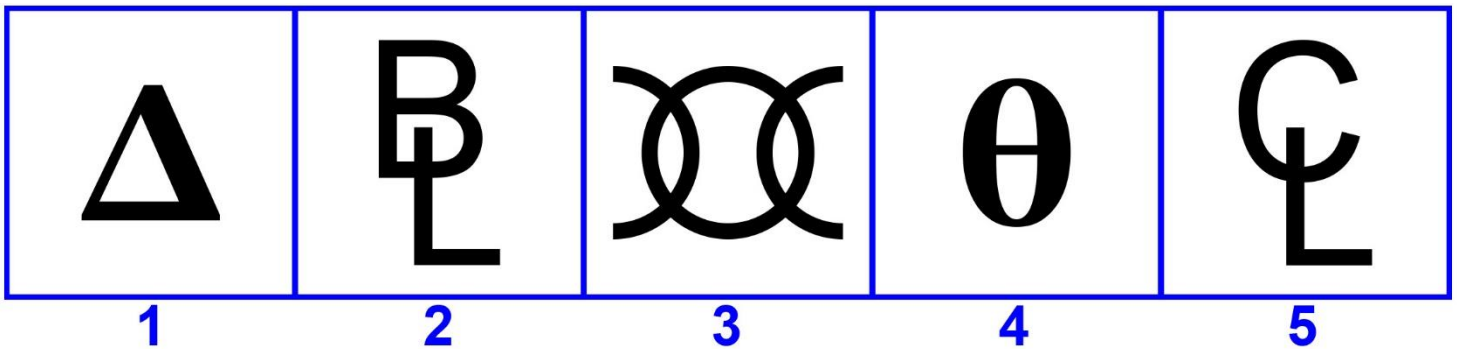
Correct answer: D

25. Which describes the difference between the height of the metacenter and the height of the center of gravity of a vessel?

- A. Height of the center of buoyancy
- B. Metacentric height
- C. Fore and aft perpendicular
- D. Height of the righting arm

Correct answer: B

D041DG



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Material, Operating Manual for Deep Driller
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