

U.S.C.G. Merchant Marine Exam

Mobile Offshore Drilling Units

Q435 OIM - Bottom Bearing Units on Location

(Sample Examination)

Choose the best answer to the following Multiple Choice Questions.

1. Prior to entering a davit-launched liferaft, which of the following checks should make first?

- (A) all personnel have removed their life preservers to facilitate boarding
- (B) the liferaft is well ventilated of excess carbon dioxide
- (C) the door flap has been cut away and stowed inside the raft
- (D) All of the above

If choice B is selected set score to 1.

2. If the metacentric height is large, a floating MODU will _____.

- (A) be stiff
- (B) have a slow and easy motion
- (C) be tender
- (D) have a tendency to yaw

If choice A is selected set score to 1.

3. Repair of structures on a MODU in the vicinity of liquid mud handling areas presents what possible hazard?

- (A) Liquid muds may flood adjoining spaces.
- (B) Toxic gasses may be present.
- (C) Flammable gasses may be present.
- (D) An oxygen-deficient atmosphere may be present.

If choice C is selected set score to 1.

4. Horizontal subdivision decks forming watertight compartments in the columns of a semisubmersible MODU increase the unit's _____.

- (A) anchor holding ratio
- (B) stability in the event of damage
- (C) towing speed
- (D) tank capacities

If choice B is selected set score to 1.

5. An uncontrolled flow of gas, oil, or other well fluids into the atmosphere is called a _____.

- (A) breakout
- (B) flow
- (C) kick
- (D) blowout

If choice D is selected set score to 1.

6. The COASTAL DRILLER is elevated in 250 feet of water, experiencing 2 knots current and 70 knot winds. With a maximum leg reaction of 5,760 kips, the maximum wave height for drilling is _____.

- (A) 15 feet
- (B) 20 feet
- (C) 25 feet
- (D) 30 feet

If choice B is selected set score to 1.

7. The DEEP DRILLER is loaded as shown in the Sample Load Form #4 (Drilling). What would be the weight of the mud in pit #4 if the sounding level changed from 8 to 6 feet?

- (A) 80.00 long tons
- (B) 77.75 long tons
- (C) 83.34 long tons
- (D) 106.67 long tons

If choice A is selected set score to 1.

8. Considering the changes to lightweight shown in section 5 of the COASTAL DRILLER Manual, the maximum allowable combination of hook, rotary, and setback load for the COASTAL DRILLER with the rotary located 34 feet aft of the transom and two feet to port of the centerline is _____.

- (A) 1000 kips
- (B) 875 kips
- (C) 854 kips
- (D) 755 kips

If choice C is selected set score to 1.

9. Beyond the area of state ownership in the U.S. outer continental shelf, the right to drill is controlled by the _____.

- (A) U.S. Corps of Engineers
- (B) Minerals Management Service
- (C) U.S. Coast Guard
- (D) American Bureau of Shipping

If choice B is selected set score to 1.

10. The overturning forces acting on a floating jack-up are generally dominated by _____.

- (A) tide
- (B) current
- (C) waves
- (D) wind

If choice D is selected set score to 1.

11. The total leg load reactions on an independent leg, self-elevating unit include static and _____.

- (A) environmental loading
- (B) basic loading
- (C) fixed loading
- (D) variable loading

If choice A is selected set score to 1.

12. A construction portfolio prepared for each new offshore drilling unit must be approved by the _____.

- (A) National Cargo Bureau
- (B) Minerals Management Service
- (C) U.S. Coast Guard
- (D) American Bureau of Shipping

If choice C is selected set score to 1.

13. The stability of a semisubmersible MODU would be seriously reduced if flooding occurred in the _____.

- (A) submerged hulls
- (B) dry mud tanks
- (C) column void spaces
- (D) ballast tanks

If choice C is selected set score to 1.

14. Each person on the rig has a designated area to proceed to in the event of a fire. This assignment is shown clearly on which of the following documents?

- (A) Certificate of Inspection
- (B) firefighting plan
- (C) shipping articles
- (D) Muster List ("Station Bill")

If choice D is selected set score to 1.

15. Compliance with the terms of the load line certificate on a MODU is the responsibility of the _____.

- (A) Operators representative
- (B) Ballast Control Operator
- (C) Master or Offshore Installation Manager
- (D) Barge Supervisor

If choice C is selected set score to 1.

16. The probability of sulfide stress cracking in the presence of hydrogen sulfide is greatest for which of the following materials?

- (A) aluminum
- (B) rubber sealing elements
- (C) low strength steel
- (D) high strength steel

If choice D is selected set score to 1.

17. While preparing for a storm when elevated, the total weight of the COASTAL DRILLER is 14,150 kips, LM are 1,712,150 ft-kips, and TM are -9,905 ft-kips. The starboard leg reaction is _____.

- (A) 4,536 kips
- (B) 4,698 kips
- (C) 4,725 kips
- (D) 4,890 kips

If choice C is selected set score to 1.

18. What fitting should you install in the rig piping to a pump to facilitate disconnecting the pump for servicing?

- (A) Nipple
- (B) Union
- (C) Coupling
- (D) Flange

If choice B is selected set score to 1.

19. A small fuel spillage has occurred during helicopter refueling. After the leak has been stopped and fire-control personnel have been notified and are standing by, the next step is to _____.

- (A) proceed with fueling operation
- (B) have helicopter move to a safer location
- (C) clean spilled fuel with rags
- (D) wash spilled fuel away with a flood of water

If choice D is selected set score to 1.

20. If help has not arrived in 10-12 hours after you abandon a MODU in a survival craft, which of the following would be the best course of action?

- (A) shut down the engine(s) and set the sea anchor
- (B) go in one direction until the fuel runs out
- (C) plot a course for the nearest land
- (D) take a vote on which direction you should go

If choice A is selected set score to 1.

21. To determine the number of inflatable liferafts required on a mobile offshore drilling unit, you should check the _____.

- (A) Operations Manual
- (B) Certificate of Inspection
- (C) load line certificate
- (D) stability letter

If choice B is selected set score to 1.

22. While preloading, the COASTAL DRILLER has a total weight of 21,401 kips. The LM are 2,560,416 ft-kips, and the TM are -6,206 ft-kips. What is the starboard leg reaction?

- (A) 7,099 kips
- (B) 7,134 kips
- (C) 7,151 kips
- (D) 7,203 kips

If choice A is selected set score to 1.

23. On board a mobile offshore drilling unit, the key to the most rapid and effective response to a man overboard situation is _____.

- (A) good communication
- (B) well-conducted drills
- (C) good equipment
- (D) a dedicated crew

If choice B is selected set score to 1.

24. For H₂S detection, sensitized tapes indicate H₂S presence by means of discoloration of an exposed spot on the tape. The shade of the color on the spot depends upon the concentration of H₂S and which of the following factors?

- (A) humidity at the time of exposure
- (B) air temperature at the time of the exposure
- (C) duration of the exposure
- (D) air pressure at the time of the exposure

If choice C is selected set score to 1.

25. The DEEP DRILLER is loaded as shown in the Sample Load Form #4 (Drilling). What would be the weight of the mud in pit #4 if the sounding level changed to 6 feet and the mud weight decreased from 16 to 14 pounds/gallon?

- (A) 70.00 long tons
- (B) 84.17 long tons
- (C) 93.34 long tons
- (D) 106.67 long tons

If choice A is selected set score to 1.

26. You are operating a liftboat. When jacking down and a leg becomes stuck on the bottom, you should _____.

- (A) raise the free legs all the way
- (B) use the engines to rotate about the leg that is stuck
- (C) jack the barge down part way to pull the leg free
- (D) submerge the barge completely to give added pull

If choice C is selected set score to 1.

27. An integral part of a blowout preventer that serves as the closing element on an open hole, and whose ends do not fit around the drill pipe but seal against each other and shut off the space below completely is the _____.

- (A) shear ram
- (B) blind ram
- (C) pipe ram
- (D) annular ram

If choice B is selected set score to 1.

28. A hydraulic accumulator aboard a MODU is designed to _____.

- (A) replenish fluid to a system
- (B) act as a fluid reservoir
- (C) provide overpressure relief
- (D) store fluid under pressure

If choice D is selected set score to 1.

29. The COASTAL DRILLER is loaded as shown in the sample load from #2 (preload). All of the preload is dumped with the exception of 50 kips in preload tank #28. What is the new LCG?

- (A) 119.11 feet AF0
- (B) 119.44 feet AF0
- (C) 119.68 feet AF0
- (D) 120.11 feet AF0

If choice C is selected set score to 1.

30. A MODU crane which has been idle for a period of over six months shall be inspected to the same standards as a _____.

- (A) yearly inspection
- (B) quarterly inspection
- (C) monthly inspection
- (D) weekly inspection

If choice A is selected set score to 1.

31. The International Oil Pollution Prevention (IOPP) Certificate required by MARPOL is issued to U.S. flag MODUs by the _____.

- (A) International Maritime Organization
- (B) Environmental Protection Agency
- (C) American Bureau of Shipping
- (D) U.S. Coast Guard

If choice D is selected set score to 1.

32. If the metacentric height is small, a floating MODU will _____.

- (A) yaw
- (B) be stiff
- (C) have a quick and rapid motion
- (D) be tender

If choice D is selected set score to 1.

33. A survival craft being used to pick up a person who has fallen overboard from a MODU should approach the person _____.

- (A) against the wind
- (B) at a high rate of speed
- (C) under oars
- (D) with the wind

If choice A is selected set score to 1.

34. The number of certificated able seamen and lifeboatmen required on a MODU is determined by the _____.

- (A) American Bureau of Shipping
- (B) Corps of Engineers
- (C) Minerals Management Service
- (D) Coast Guard

If choice D is selected set score to 1.

35. In a storm, the leeward lines of a MODU's mooring system will _____.

- (A) pull the unit in the opposite direction that the weather is pushing it
- (B) tend to keep the unit on its original location over the well head
- (C) pull the unit in the same direction that the weather is pushing it
- (D) affect the unit's draft and inclination as maximum mooring tensions are reached

If choice C is selected set score to 1.

36. The person in charge of a mobile offshore drilling unit must insure that _____.

- (A) the date and hour of each fire drill is recorded in the log
- (B) each bilge pump is operated at least once a week
- (C) whistles and general alarm bells are tested once each day
- (D) all personnel are provided with work vests

If choice A is selected set score to 1.

37. When should the emergency position-indicating radio beacon be activated after abandoning a MODU?

- (A) Immediately
- (B) Only after sunset
- (C) After one hour
- (D) Only when another vessel is in sight

If choice A is selected set score to 1.

38. For a MODU with trim, a decrease in GMT will cause the angle of inclination to _____.

- (A) stabilize at an angle of loll
- (B) remain constant
- (C) decrease
- (D) increase

If choice D is selected set score to 1.

39. When the COASTAL DRILLER is loaded as shown in the sample load form Number 3 (drilling), the hook load is placed in the pipe racks. What would be the new variable load?

- (A) 2,381.0 kips
- (B) 3,381.0 kips
- (C) 3,658.8 kips
- (D) 4,381.0 kips

If choice C is selected set score to 1.

40. What maximum wind velocity is assumed when determining the limits of elevated service for the COASTAL DRILLER?

- (A) 100 knots
- (B) 70 knots
- (C) 50 knots
- (D) It varies with the Allowable Wind and Wave charts.

If choice A is selected set score to 1.

41. In the piping systems of a MODU, what type of valve gives the least resistance to fluid flow when fully open?

- (A) Butterfly valve
- (B) Gate valve
- (C) Packless valve
- (D) Globe valve

If choice B is selected set score to 1.

42. Under the regulations implementing MARPOL, a mobile offshore drilling unit is required to have an International Oil Pollution Prevention (IOPP) Certificate when the unit _____.

- (A) engages in a voyage to a port of another country which is a party of MARPOL
- (B) moves to a new drilling location in U.S. waters
- (C) is drilling on the Outer Continental Shelf
- (D) All of the above

If choice A is selected set score to 1.

43. Air gap is the vertical distance between the bottom of the hull and the _____.

- (A) wave crest plus the charted water depth and tidal corrections
- (B) still water level
- (C) wave crest
- (D) wave crest plus the charted water depth and tidal correction and storm surge

If choice B is selected set score to 1.

44. To what distance below the hull must the legs of the COASTAL DRILLER be lowered in order to meet the stability and leg strength requirements during the wind speeds greater than 70 knots?

- (A) 0.0 feet
- (B) 1.2 feet
- (C) 25.0 feet
- (D) 60.5 feet

If choice D is selected set score to 1.

45. Until a change to lightweight has been approved, the weights and center of gravity locations for the changes to lightweight shown in the permanent record for the Deep Driller are treated as _____.

- (A) fixed load
- (B) variable load
- (C) gross tonnage
- (D) basic load

If choice B is selected set score to 1.

46. Regulations require that line throwing equipment on mobile offshore drilling units be tested at regular intervals. What entry should be made in the logbook?

- (A) Only the date of the test
- (B) The name of the person making the test
- (C) An entry is required only if there is a failure.
- (D) No entry is required unless it is an official logbook.

If choice A is selected set score to 1.

47. You are operating a liftboat. Before starting jacking operations you should _____.

- (A) close the wheelhouse doors
- (B) put the crane in a vertical position
- (C) put a watch in the engine room
- (D) have all personnel don life jackets

If choice D is selected set score to 1.

48. The COASTAL DRILLER is loaded as shown in Sample Load Form #3 (Drilling). What would be the new sum of longitudinal moments for the liquid variables if the entire contents of drill water tank #17 are transferred to drill water tank #18?

- (A) 181,648 ft-kips
- (B) 181,718 ft-kips
- (C) 187,345 ft-kips
- (D) 195,462 ft-kips

If choice B is selected set score to 1.

49. When a wind force causes a floating MODU to heel to a static angle, the _____.

- (A) deck-edge immersion occurs
- (B) centers of buoyancy and gravity are in the same vertical line
- (C) righting moment equals the wind-heeling moment
- (D) downflooding point is below water

If choice C is selected set score to 1.

50. What danger is presented if a waterspout passes over a MODU?

- (A) Personnel may be injured by loose deck gear blown by the wind.
- (B) Visibility could be restricted by low clouds.
- (C) Heavy rains could cause downflooding.
- (D) Large waves could cause structural damage.

If choice A is selected set score to 1.