

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. On offshore drilling units fitted with fixed CO₂ systems, the system must withstand a bursting pressure of at least _____.
- (A) 5,000 pounds per square inch
 - (B) 6,000 pounds per square inch
 - (C) 8,000 pounds per square inch
 - (D) 10,000 pounds per square inch

If choice B is selected set score to 1.

2. The regulations regarding Oil Record Books do not apply to MODU's that _____.
- (A) have a valid National Pollutant Discharge Elimination System permit
 - (B) are on a voyage of more than 24 hours
 - (C) are on an international voyage
 - (D) have a valid International Oil Pollution Prevention Certificate

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

If choice A is selected set score to 1.

4. During preloading or elevating the COASTAL DRILLER, jacking-up may continue if the total weight is less than _____.
- (A) 21,497 kips
 - (B) 21,297 kips
 - (C) 17,700 kips
 - (D) 14,400 kips

If choice D is selected set score to 1.

5. What is the weight in drill water tank #1 for the COASTAL DRILLER, if the sounding in the tank is 8 feet 2 inches?
- (A) 202.16 kips
 - (B) 204.60 kips
 - (C) 206.87 kips
 - (D) 209.34 kips

If choice B is selected set score to 1.

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

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

If choice A is selected set score to 1.

7. Buoyancy associated with empty or partly empty ballast tanks in the mat of a mat supported jack-up MODU during jacking operations can cause _____.

- (A) capsizing
- (B) progressive flooding
- (C) delays
- (D) negative buoyancy

If choice A is selected set score to 1.

8. During severe storms when survival becomes a major concern, it may become necessary to relieve high anchor tensions on the windward side of the unit by _____.

- (A) paying out cable on the leeward side
- (B) deballasting the rig
- (C) paying out cable on the windward side
- (D) ballasting the rig

If choice A is selected set score to 1.

9. Structural stress levels in a MODU are the sum of loading stresses and stresses due to _____.

- (A) variable loads
- (B) environmental loads
- (C) ballast loading
- (D) mooring loads

If choice B is selected set score to 1.

10. The COASTAL DRILLER at a draft of 10.5 feet, transfers a portion of the on board liquids from full drill water tank #23 to empty drill water tank #24. What is the change in the free surface correction?

- (A) 0.69 foot
- (B) 0.44 foot
- (C) 0.34 foot
- (D) 0.22 foot

If choice B is selected set score to 1.

11. Where is thicker plating usually found in the construction of integral tanks on a MODU?

- (A) At the top of the tank
- (B) At the center of the tank
- (C) On the outside of the tank
- (D) At the bottom of the tank

If choice D is selected set score to 1.

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

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

If choice D is selected set score to 1.

13. For a MODU with list, a decrease in GM will cause the angle of inclination to _____.

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

If choice D is selected set score to 1.

14. A slow and easy motion of a MODU in a seaway is an indication of a _____.

- (A) low center of gravity
- (B) small GM
- (C) stiff vessel
- (D) large GZ

If choice B is selected set score to 1.

15. What is the effect of high concentrations of H₂S gas on personnel?

- (A) cause dizziness
- (B) cause eye inflammation
- (C) paralyze your breathing system
- (D) cause involuntary muscle contractions

If choice C is selected set score to 1.

16. On the COASTAL DRILLER, hook load includes the weight of the _____.

- (A) conductor tension
- (B) rotary load
- (C) drill string
- (D) setback load

If choice C is selected set score to 1.

17. The free surface corrections depend upon the dimensions of the surface of the free liquids and the _____.

- (A) volume of liquid in the tank
- (B) height of the center of gravity of the MODU
- (C) location of the tank in the MODU
- (D) displacement of the MODU

If choice D is selected set score to 1.

18. The document that certifies the correctness of the load line marks on a MODU is called the _____.

- (A) Certificate of Documentation
- (B) SOLAS Certificate
- (C) Certificate of Inspection
- (D) Load line certificate

If choice D is selected set score to 1.

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

If choice A is selected set score to 1.

20. 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.

- 21.** If a severe storm threatens the COASTAL DRILLER while elevated, the setback in the derrick should be lowered and placed in the pipe rack. Its weight should be accounted for as _____.
- (A) drilling loads
 - (B) variable loads
 - (C) fixed weight
 - (D) environmental loads

If choice B is selected set score to 1.

- 22.** The COASTAL DRILLER is observed to be level at a draft of 10 feet 6 inches. At the same time, the calculated load form shows the displacement to be 13,445 kips, total longitudinal moments 1,613,466 foot-kips, and total transverse moments -10,000 foot-kips. What is the longitudinal location of the missing load?
- (A) 46 feet AFO
 - (B) 84 feet AFO
 - (C) 189 feet AFO
 - (D) 217 feet AFO

If choice B is selected set score to 1.

- 23.** The COASTAL DRILLER, elevated in 200 feet of water, has two knots of current and 70 knot winds. With a maximum leg reaction of 5,840 kips, the maximum wave height for drilling is _____.
- (A) 20 feet
 - (B) 30 feet
 - (C) 35 feet
 - (D) 40 feet

If choice A is selected set score to 1.

- 24.** For a semisubmersible moored in heavy weather conditions, the leeward lines should be paid out, and the windward lines adjusted so that _____.
- (A) several weather lines carry about the same tension
 - (B) the vertical component of chain tension at the lower fairlead is not excessive
 - (C) at least 1,000 feet of chain lie along the bottom
 - (D) the unit remains as close to the hole as possible

If choice A is selected set score to 1.

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

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

If choice C is selected set score to 1.

26. The COASTAL DRILLER is elevated in 192 feet of water. Leg penetration is 83 feet. The maximum leg reaction is 5,940 kips. The waves are 30 feet and the current is 2 knots. What is the maximum wind for drilling?

- (A) 45 knots
- (B) 50 knots
- (C) 57 knots
- (D) 62 knots

If choice B is selected set score to 1.

27. 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 port leg reaction?

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

If choice D is selected set score to 1.

28. The COASTAL DRILLER is drilling while weighing 15,436 kips. LM are 2,006,680 ft-kips, and TM are -7,718 ft-kips. What is the port leg reaction?

- (A) 3,806 kips
- (B) 5,751 kips
- (C) 5,879 kips
- (D) 7,549 kips

If choice C is selected set score to 1.

29. 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.

30. During a storm, the mooring line on a MODU should be long enough so that the angle between the anchor shank and the ocean floor is _____.

- (A) 0°
- (B) 30°
- (C) 60°
- (D) 90°

If choice A is selected set score to 1.

31. What is the percentage of oxygen in a typical sample of uncontaminated air?

- (A) 12 percent
- (B) 15 percent
- (C) 18 percent
- (D) 21 percent

If choice D is selected set score to 1.

32. To assure safe boarding and launching of a davit-launched liferaft from a MODU, preparation should includewhich of the following choices?

- (A) removing any side protective rails and checking that the overside and surface level are clear
- (B) testing to assure that the required lamps are functioning properly
- (C) testing the spring loaded drum to assure it will retract the fall release hook
- (D) load testing the davit arm and the painter system

If choice A is selected set score to 1.

33. In evacuation from a MODU, an individual without the option of a survival craft or liferaft should enter the water on the leeward side. This procedure is valid except when which of the following circumstances applies?

- (A) a rigid survival craft is in the area
- (B) water temperature is below 40°F
- (C) there is burning oil on the water
- (D) there is a rescue craft in the area

If choice C is selected set score to 1.

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

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

If choice C is selected set score to 1.

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

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

If choice D is selected set score to 1.

36. If you see someone fall overboard from a MODU, you should _____.

- (A) run to the radio room to send an emergency message
- (B) call for help and keep the individual in sight
- (C) immediately jump in the water to help the individual
- (D) go to the control room for the distress flares

If choice B is selected set score to 1.

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

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

If choice B is selected set score to 1.

38. The prohibition against exceeding the load line draft may be considered temporarily not applicable when _____.

- (A) bottom supported units are being raised or lowered to the sea bed
- (B) column-stabilized units are operating in water depths over 600 feet
- (C) column-stabilized units are operating in waters outside U.S. jurisdiction
- (D) bottom supported units are being towed on a move of less than 12 hours

If choice A is selected set score to 1.

39. Which type of respiratory protection is preferable for repair/investigation personnel on a MODU in a hydrogen sulfide (H₂S) environment?

- (A) U.S. Navy Oxygen Breathing Apparatus (OBA)
- (B) Demand Self-Contained Breathing Apparatus (SCBA)
- (C) Pressure-Demand Self-Contained Breathing Apparatus (SCBA)
- (D) Emergency Escape Breathing Apparatus (EEBA)

If choice C is selected set score to 1.

40. The end of the joint with the exterior threads is called the _____.

- (A) stem
- (B) stand
- (C) box
- (D) pin

If choice D is selected set score to 1.

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

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

If choice A is selected set score to 1.

42. In MODU operations, hoisting and lowering pipe in and out of the drilled hole is the main function of the _____.

- (A) stand pipe
- (B) drawworks
- (C) swivel
- (D) cathead spool

If choice B is selected set score to 1.

43. For well control, the American Petroleum Institute recommends that hydraulic units have sufficient horsepower to close the annular preventer in _____.

- (A) 15 seconds
- (B) 30 seconds
- (C) 45 seconds
- (D) 60 seconds

If choice B is selected set score to 1.

44. On offshore drilling units, the number of industrial personnel permitted to be on board during drilling operations is found on the _____.

- (A) Owner's Operation Manual
- (B) Safety of Life at Sea Certificate
- (C) Classification Certificate
- (D) U.S. Coast Guard Certificate of Inspection

If choice D is selected set score to 1.

45. Annual inspection of MODU cranes shall be conducted by _____.

- (A) U.S. Coast Guard
- (B) the person in charge
- (C) the crane operator
- (D) a qualified inspector

If choice D is selected set score to 1.

46. If you observe any situation which presents a safety or pollution hazard during fuel transfer operations on a MODU, what action should you take FIRST?

- (A) Wait for the person in charge to act.
- (B) Notify the ballast control operator.
- (C) Shut down the transfer operation.
- (D) Sound the fire alarm.

If choice C is selected set score to 1.

47. When pumping fuel between an offshore supply vessel (OSV) and a MODU, there must be direct VHF radio contact between the offshore supply vessel engineer and the _____.

- (A) barge superintendent
- (B) person in charge of the fuel transfer
- (C) crane operator
- (D) ballast control operator

If choice B is selected set score to 1.

48. The number of certificated able seamen and lifeboatmen required on a MODU is stated in the _____.

- (A) Minerals Management Service regulations
- (B) Safety of Life at Sea Convention
- (C) Certificate of Inspection
- (D) American Bureau of Shipping code

If choice C is selected set score to 1.

49. In the case of a casualty involving a MODU, the Master, owner, agent or person in charge shall make the records required by regulation available upon request to _____.

- (A) anyone involved in the casualty
- (B) the local Captain of the Port
- (C) any Coast Guard official authorized to investigate the casualty
- (D) All of the above

If choice C is selected set score to 1.

50. A branch line valve of a fire extinguishing system on a MODU must be marked with the _____.

- (A) date of the last maintenance inspection
- (B) pressure needed to maintain an effective stream at that point
- (C) maximum pressure allowed at that branch
- (D) name of the space or spaces which it serves

If choice D is selected set score to 1.