

U.S.C.G. Merchant Marine Exam
Mobile Offshore Drilling Units
Q434 OIM Bottom Bearing Units Underway
(Sample Examination)

Choose the best answer to the following Multiple-Choice Questions.

1. While in 150 feet water depth when the pitch angle of the COASTAL DRILLER is 1 degree, the platform pitch period for going on location should be longer than _____.
- A. 0.2 second
 - B. 3.2 seconds
 - C. 7.0 seconds
 - D. 9.2 seconds

Correct answer: C

2. Among the possible causes of unexpected constant inclination of the floating COASTAL DRILLER is _____.
- A. miscalculation of loads
 - B. liquid transfer through open valves
 - C. consumption of on-board liquids
 - D. flooding due to hull damage

Correct answer: A

3. For a jack-up, the angle of maximum stability corresponds approximately to the angle of _____.
- A. the load line
 - B. loll
 - C. deck edge immersion
 - D. downflooding

Correct answer: C

4. If a man falls overboard from a rig under tow, you should FIRST _____.
- A. deploy life buoys
 - B. sound the general alarm
 - C. notify the tug
 - D. launch a boat

Correct answer: A

5. When the wave period and the apparent rolling period of the MODU are the same _____.
- A. synchronous rolling occurs
 - B. roll amplitude is dampened
 - C. roll period decreases
 - D. roll period increases

Correct answer: A

6. The number of certificated able seamen and lifeboatmen required on a MODU is determined by the _____.
- A. Coast Guard
 - B. American Bureau of Shipping
 - C. Minerals Management Service
 - D. Corps of Engineers

Correct answer: A

7. The maximum draft to which a drilling unit may be safely loaded is called _____.
- A. calculated draft
 - B. deep draft
 - C. mean draft
 - D. load line draft

Correct answer: D

8. 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. basic load
 - C. fixed load
 - D. gross tonnage

Correct answer: A

9. The COASTAL DRILLER, while in an ocean transit, experiences a single amplitude roll of 8 degrees. What is the minimum period of motion which does not exceed the design limits of the legs?
- A. 10 seconds
 - B. 8 seconds
 - C. 6 seconds
 - D. 4 seconds

Correct answer: A

10. The deck plating on a MODU is supported primarily by deck longitudinals and deck _____.
- A. stanchions
 - B. frames
 - C. beams
 - D. girders

Correct answer: C

11. While in ocean transit, the COASTAL DRILLER experiences a single amplitude roll of 5 degrees. What is the minimum roll period that does not exceed the design limits of the legs?

- A. 2.7 seconds
- B. 4.0 seconds
- C. 6.5 seconds
- D. 7.2 seconds

Correct answer: D

12. The COASTAL DRILLER, with a draft of 10 feet 3 inches in seawater, has a displacement of _____.

- A. 13,011 kips
- B. 13,336 kips
- C. 13,445 kips
- D. 14,637 kips

Correct answer: B

13. The COASTAL DRILLER has a trim of 2.13 feet by the stern. The draft in sea water at the forward draft marks is observed to be 8.0 feet. The KMT is _____.

- A. 153.73 feet
- B. 160.42 feet
- C. 179.41 feet
- D. 203.97 feet

Correct answer: B

14. The COASTAL DRILLER is loaded as shown in the Sample Load Form #1 (Rig Move). What is the new LCG if the entire contents of drill water tanks 6 and 7 are discharged?

- A. 118.20 feet
- B. 119.44 feet
- C. 120.10 feet
- D. 121.36 feet

Correct answer: C

15. When preloading the COASTAL DRILLER, the maximum total weight shall not exceed _____.

- A. 21,497 kips
- B. 21,297 kips
- C. 17,700 kips
- D. 14,400 kips

Correct answer: A

16. The initial tension set in the mooring system of a MODU establishes the _____.
- A. distance the unit can be offset from the wellbore before the restoring forces oppose the environmental forces
 - B. maximum water depth at which drilling operations can be conducted
 - C. minimum amount of ballast needed to keep the vessel at operating draft during normal drilling operations
 - D. maximum time it will take to disconnect the riser package in the event of a storm

Correct answer: A

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

Correct answer: B

18. In securing deck loads for an ocean tow, drill pipe should be _____.
- A. limited to no more than five courses high
 - B. provided with bulwarks at both ends of their bays
 - C. galvanized to protect against corrosion
 - D. held in place with heavy materials such as spare pendant wire

Correct answer: B

19. The COASTAL DRILLER is in transit at a draft of 10.0 feet. It loads 216.43 kips of weight aboard. What is the new draft?
- A. 10.2 feet
 - B. 10 feet 2 inches
 - C. 10 feet 3 inches
 - D. 10 feet 4 inches

Correct answer: B

20. Annual inspection of MODU cranes shall be conducted by _____.
- A. the person in charge
 - B. the crane operator
 - C. U.S. Coast Guard
 - D. a qualified inspector

Correct answer: D

21. Curve B in the Design Limits of Legs Chart of the Coastal Driller Operating Manual, shows the operating limits during normal transit based on _____.

- A. load line
- B. variable load
- C. leg strength
- D. environmental load

Correct answer: C

22. In MODU construction, beams are transverse girders which provide support to _____.

- A. bulkheads
- B. vertical frames
- C. decks
- D. deckhouse structures

Correct answer: C

23. The element used to keep weight on the bit at a constant value in spite of up-and-down movement of a MODU during floating drilling operations is the heave or drill string _____.

- A. compensator
- B. tensioner
- C. equalizer
- D. stabilizer

Correct answer: A

24. The COASTAL DRILLER is loaded as shown in the Sample Load Form #1 (Rig Move). If the entire contents of the port pipe rack are back-loaded to an offshore supply vessel, how much drill water would have to be transferred from tank #1 to tank #26 to level the vessel in trim?

- A. 64.4 kips
- B. 114.9 kips
- C. 111.4 kips
- D. 62.7 kips

Correct answer: B

25. Yawing can be described as _____.

- A. jumping on the tow line as the rig pitches
- B. jumping on the tow line as the rig slams into waves
- C. veering from side to side on the end of the tow line
- D. corkscrew motion due to wave action

Correct answer: C

26. The COASTAL DRILLER is in ocean transit in which the winds are not expected to exceed 70 knots. In order to meet the leg strength requirements, the tip of can (TOC) position should be at _____.

- A. 0.00 feet (flush with bottom of hull)
- B. 1.20 feet
- C. 12.38 feet
- D. 60.50 feet

Correct answer: C

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

Correct answer: D

28. Which type of hull damage on a floating MODU should be repaired first?

- A. Damage to/in machinery rooms
- B. Damage to interior watertight boundaries
- C. Damage at or just above the waterline
- D. Damage below the waterline

Correct answer: C

29. What are the transverse moments for 10.5 feet of sea water in preload tank #2 for the COASTAL DRILLER?

- A. 15,044 kips
- B. 12,123 kips
- C. 5,468 kips
- D. 2,732 kips

Correct answer: B

30. To determine the number of portable fire extinguishers required on a mobile offshore drilling unit, you should check the _____.

- A. Safety of Life at Sea Certificate
- B. Certificate of Inspection
- C. hot work permit
- D. Operations Manual

Correct answer: B

31. While on a normal tow, the COASTAL DRILLER is threatened with the approach of a severe storm. The legs should be lowered so that the TOC (tip-of-can) is lowered from 1.20 feet to _____.
- A. 2.20 feet
 - B. 12.38 feet
 - C. 48.12 feet
 - D. 60.50 feet

Correct answer: D

32. Beyond the area of state ownership in the U.S. outer continental shelf, the right to drill is controlled by the _____.
- A. U.S. Coast Guard
 - B. American Bureau of Shipping
 - C. U.S. Corps of Engineers
 - D. Bureau of Ocean Energy Management

Correct answer: D

33. Which of the following items should all MODU personnel be familiar with?
- A. boarding and operating procedures
 - B. maintenance schedule
 - C. fuel consumption rates
 - D. navigational systems

Correct answer: A

34. The COASTAL DRILLER is loaded as shown in the Sample Load Form Number 1 (Rig Move). If the contents of the No.7 drill water tank are discharged, what would be the new TCG?
- A. -0.15 foot
 - B. 0.00 foot
 - C. 0.15 foot
 - D. 0.29 foot

Correct answer: C

35. On the machinery deck of the COASTAL DRILLER, each watertight compartment has at least one sump valve that can be remotely operated from the _____.
- A. control house
 - B. OIM's office
 - C. OIM's quarters
 - D. bilge pit

Correct answer: D

36. What type of test determines the pressure at which the formation immediately below the last set casing will take fluid?
- A. Conductor
 - B. Leak-off
 - C. Drill stem
 - D. Production

Correct answer: B

37. A jack-up with a calculated moment to change list one inch (MCL1") of 1,200 foot-kips intends to transfer 100 kips of weight in a transverse direction. How far should the weight be transferred to change the draft on the port side from 11.5 to 11.0 feet?
- A. 12 feet
 - B. 48 feet
 - C. 120 feet
 - D. 144 feet

Correct answer: D

38. While underway in a field move with the lower hulls awash, a semisubmersible has a maximum allowable KG of 63.69 feet; KMT is 65.12 and KML is 64.92. The KGT is 56.13 and KGL is 55.89. What is the margin on the maximum allowable KG?
- A. 1.43 feet
 - B. 7.56 feet
 - C. 7.80 feet
 - D. 8.99 feet

Correct answer: B

39. The COASTAL DRILLER is loaded as shown in the Sample Load Form Number 1 (Rig Move). If the drill water in drill water tanks 6 and 25 are discharged, what is the new draft?
- A. 8.26 feet
 - B. 10.66 feet
 - C. 10.88 feet
 - D. 11.10 feet

Correct answer: B

40. Which of the following would be the most probable location to encounter explosive and flammable gasses on a MODU?
- A. at any location
 - B. on the drill floor and liquid mud handling areas
 - C. in machinery spaces
 - D. in bulk storage tanks

Correct answer: B

41. The COASTAL DRILLER's ability to meet the damage stability criteria depends on maintaining a watertight integrity, KGL and KGT less than maximum allowed, level attitude, and displacement less than _____.
- A. 11,777 kips
 - B. 13,158 kips
 - C. 14,158 kips
 - D. 17,280 kips

Correct answer: C

42. On the COASTAL DRILLER, the level of water in each of two pump bilge pits is monitored by hydrostatic alarm switches connected to a remote panel located in the _____.
- A. OIM's office
 - B. SCR room
 - C. control house
 - D. OIM's quarters

Correct answer: A

43. A tropical storm is building strength some distance from your MODU. Waves are coming from the east, with periods increasing from 5 seconds to 15 seconds. The swell is from the east. Where was the storm when these new swells were generated?
- A. To the south of you
 - B. To the east of you
 - C. To the north of you
 - D. To the west of you

Correct answer: B

44. What is the sounding in drill water tank #1 for the COASTAL DRILLER, if the weight of drill water in the tank is 388.32 kips?
- A. 14.5 feet
 - B. 15.0 feet
 - C. 15.5 feet
 - D. 16.0 feet

Correct answer: C

45. The helicopter deck on an offshore drilling unit is required to be fitted with perimeter lights in alternating colors of _____.
- A. yellow and red
 - B. yellow and blue
 - C. yellow and white
 - D. red and white

Correct answer: B

46. The COASTAL DRILLER is loaded as shown in the Sample Load Form #1 (Rig Move). If the contents of #6 and #7 Drill Water Tanks are discharged, what is the new longitudinal free surface correction?
- A. 1.63 feet
 - B. 2.14 feet
 - C. 2.24 feet
 - D. 2.38 feet

Correct answer: A

47. 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 bow leg reaction?
- A. 7,099 kips
 - B. 7,134 kips
 - C. 7,151 kips
 - D. 7,203 kips

Correct answer: A

48. Among the possible causes of unexpected rapid increasing inclination of the floating COASTAL DRILLER is _____.
- A. miscalculation of loads
 - B. external environmental forces
 - C. consumption of onboard liquids
 - D. flooding due to hull damage

Correct answer: D

49. While on a normal tow, the COASTAL DRILLER is threatened with the approach of a severe storm. Including the time required to place the generators on-line, the approximate time required to lower the legs from a TOC (tip-of-can) position of 1.20 feet to 60.50 feet is _____.
- A. 8 minutes
 - B. 32 minutes
 - C. 47 minutes
 - D. 55 minutes

Correct answer: D

50. The COASTAL DRILLER is in transit at the load line draft. It discharges 279.93 kips of weight. The new draft is _____.
- A. 10.0 feet
 - B. 10 feet 8 inches
 - C. 10.8 feet
 - D. 10.88 feet

Correct answer: B