

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 ocean transit, the COASTAL DRILLER has a roll period of four seconds. What would be the largest angle each side of vertical that does not exceed the design limit of the legs?
- A. 6.3 degrees
 - B. 5.0 degrees
 - C. 3.5 degrees
 - D. 2.0 degrees

Correct answer: D

2. 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")

Correct answer: D

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

Correct answer: D

4. The COASTAL DRILLER is loaded as shown in the Sample Load Form #1 (Rig Move). What is the new VCG if the entire contents of drill water tanks 6 and 7 are discharged?
- A. 38.00 feet
 - B. 48.38 feet
 - C. 49.16 feet
 - D. 65.00 feet

Correct answer: C

5. The COASTAL DRILLER is loaded as shown in the Sample Load Form #1 (Rig Move). What is the margin on the maximum allowable KG if winds remain less than 70 knots?
- A. 0.00 feet
 - B. 14.35 feet
 - C. 14.82 feet
 - D. 65.00 feet

Correct answer: B

6. 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

7. 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

8. 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

9. A MODU displacing 30,500 long tons has a KG of 60 feet. A weight of 500 long tons is discharged from a VCG of 150 feet. What is the change in KG?
- A. 2.5 feet downward
 - B. 2.0 feet downward
 - C. 1.5 feet downward
 - D. 1.0 foot downward

Correct answer: C

10. The COASTAL DRILLER has sufficient reserve stability to overcome damage due to flooding of any one watertight compartment in winds up to _____.
- A. 36 knots
 - B. 50 knots
 - C. 70 knots
 - D. 100 knots

Correct answer: B

- 11.** The wooden plug inserted in the vent of a damaged tank of a MODU should be removed in case it is decided to _____.
- A. use the crossover system
 - B. abandon the rig
 - C. pump from the damaged tank
 - D. fight a fire

Correct answer: C

- 12.** What is the VCG of the drill water in the COASTAL DRILLER's #1 Drill Water Tank, if the weight in the tank is 388.32 kips?
- A. 7.25 feet
 - B. 7.50 feet
 - C. 7.75 feet
 - D. 8.00 feet

Correct answer: C

- 13.** 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. control house
 - B. OIM's quarters
 - C. OIM's office
 - D. SCR room

Correct answer: C

- 14.** Who has the ultimate responsibility for the safety of a mobile offshore drilling unit while it is being towed to a new location?
- A. The Pilot
 - B. The Offshore Installation Manager
 - C. The rig mover
 - D. The marine surveyor

Correct answer: C

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

Correct answer: A

- 16.** 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

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

Correct answer: C

- 18.** A heavy steel device that is set on the sea floor and used as a drilling template in offshore drilling operations is called a _____.
- A. temporary guide base
 - B. foundation template
 - C. guide frame
 - D. permanent guide base

Correct answer: A

- 19.** A hurricane has recurved to the northeast and its forward speed is 20 knots. Your MODU is located 600 miles northeast of the hurricane's center. How long will it take for the hurricane center to reach your position if it holds its present course and speed?
- A. 10 hours
 - B. 30 hours
 - C. 50 hours
 - D. 80 hours

Correct answer: B

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

Correct answer: D

- 21.** If you must abandon a rig in VERY HEAVY SEAS, in a survival craft, when should you remove the safety pin and pull the hook release?
- A. Upon first wave contact
 - B. Only when waterborne
 - C. One to three feet before first wave contact
 - D. Immediately upon launching

Correct answer: D

- 22.** 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

- 23.** 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. Bureau of Ocean Energy Management
 - D. U.S. Corps of Engineers

Correct answer: C

- 24.** Adding the longitudinal free surface correction to the uncorrected height of the center of gravity of a MODU yields _____.
- A. KGL
 - B. KG
 - C. GML
 - D. FSCL

Correct answer: A

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

Correct answer: A

26. 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

27. Deck beams on a MODU are generally spaced at equal intervals and run _____.

- A. intermittently
- B. transversely
- C. longitudinally
- D. vertically

Correct answer: B

28. Where are self-closing doors required on a MODU?

- A. In each stair tower
- B. In the galley
- C. To each sleeping room
- D. To the engine room

Correct answer: A

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

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

Correct answer: B

30. For a jack-up, the angle of maximum stability corresponds approximately to the angle of _____.

- A. deck edge immersion
- B. loll
- C. downflooding
- D. the load line

Correct answer: A

31. The COASTAL DRILLER is loaded as shown in the Sample Load Form #1 (Rig Move). How much more variable load in kips can be placed on the unit if winds increase to greater than 70 knots?

- A. 0 kips
- B. 200 kips
- C. 600 kips
- D. 1,000 kips

Correct answer: A

- 32.** The COASTAL DRILLER, in transit with winds expected to exceed 70 knots, must lower the legs to 60.5 feet below the hull in order to meet the requirements for leg strength and _____.
- A. environmental load
 - B. stability
 - C. variable load
 - D. load line

Correct answer: B

- 33.** 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

- 34.** The series of valves used to control the return flow in well control operations is called the _____.
- A. accumulator manifold
 - B. choke manifold
 - C. standpipe manifold
 - D. valve assembly

Correct answer: B

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

Correct answer: A

- 36.** The COASTAL DRILLER is loaded as shown in the Sample Load Form #1 (Rig Move). What is the value of KML if the entire contents of drill water tanks 6 and 7 are discharged?
- A. 253.90 feet
 - B. 253.24 feet
 - C. 252.92 feet
 - D. 252.24 feet

Correct answer: C

37. The COASTAL DRILLER, while in transit, expects the winds to increase to 75 knots. In order to meet the stability and 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: D

38. 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

39. Among the possible causes of unexpected constant inclination of the floating COASTAL DRILLER is _____.

- A. consumption of on board liquids
- B. liquid transfer through open valves
- C. flooding due to hull damage
- D. miscalculation of loads

Correct answer: D

40. On the COASTAL DRILLER, the level of water in each of two pump bilge pits is monitored by _____.

- A. hydrostatic alarm switches
- B. visual sight gages
- C. OSS units (overflow sequence selector units)
- D. low- and high-level alarms

Correct answer: A

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

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

Correct answer: C

42. The intact volume above the waterline of a floating MODU is _____.

- A. gross tonnage
- B. displacement volume
- C. reserve buoyancy
- D. net tonnage

Correct answer: C

43. In securing deck loads for an ocean tow, drill pipe should be _____.

- A. galvanized to protect against corrosion
- B. limited to no more than five courses high
- C. held in place with heavy materials such as spare pendant wire
- D. provided with bulwarks at both ends of their bays

Correct answer: D

44. 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

Correct answer: B

45. 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

46. For a MODU with transverse inclination, an increase in GMT causes _____.

- A. trim to decrease
- B. list to stabilize at an angle of loll
- C. list to decrease
- D. list to increase

Correct answer: C

47. 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

- 48.** To determine the number of portable fire extinguishers required on a mobile offshore drilling unit, you should check the _____.
- A. Certificate of Inspection
 - B. Operations Manual
 - C. Safety of Life at Sea Certificate
 - D. hot work permit

Correct answer: A

- 49.** 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

- 50.** 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