U.S.C.G. Merchant Marine Exam

Tankerman Assistant

Q456 Tankship Dangerous Liquids

(Sample Examination)
Chose the best answer to the following Multiple Choice Questions.

1. How does an inert gas system on a tanker function to prevent explosions in cargo tanks?
   - (A) Inert gas filters out the flammable vapors from the cargo tank spaces.
   - (B) Maintains a positive pressure on the vent header to cool the flammable vapors.
   - (C) De-energizes the "charged mist" effect.
   - (D) Inert gas dilutes the flammable vapor and air concentrations to keep them below the lower explosive limit.

   *If choice D is selected set score to 1.*

2. The person in charge on the vessel and the person in charge at the facility must hold a meeting before starting the transfer of oil. Who must decide to start the transfer?
   - (A) The person in charge on the vessel
   - (B) The person in charge of either place that is doing the pumping
   - (C) The person in charge at the facility
   - (D) Both persons in charge

   *If choice D is selected set score to 1.*

3. According to U.S. regulations, which of the following conditions would disqualify a nonmetallic hose as being suitable for use in transferring oil?
   - (A) A cut in the cover which makes the reinforcement visible.
   - (B) Evidence of internal or external deterioration.
   - (C) The hose has not been tested in the last 180 days.
   - (D) A blown gasket when hydrostatic test pressure is applied.

   *If choice B is selected set score to 1.*

4. What is the maximum allowable oxygen content within the ships cargo tanks, inert gas piping and the vapor recovery system?
   - (A) 4%
   - (B) 5%
   - (C) 8%
   - (D) 10%

   *If choice C is selected set score to 1.*
5. On modern tankers with separate pumprooms, which of the following is used to minimize cargo pump shaft leakage?

- (A) Stuffing box glands
- (B) Mechanical seals
- (C) Slinger rings
- (D) Shaft sleeves

*If choice B is selected set score to 1.*

6. To insure proper seating when closing a valve on a tank, what position should the valve be in?

- (A) closed, opened a half turn, and then closed again
- (B) set up as tight as possible by hand
- (C) set up tight using a valve wrench
- (D) closed against the stop and the locking pin inserted

*If choice A is selected set score to 1.*

7. Your vessel is taking on cargo oil when a small leak develops in the hose. You order the pumping stopped. What action should you take before you resume pumping?

- (A) replace the hose
- (B) place a large drip pan under the leak and plug the scuppers
- (C) notify the terminal superintendent
- (D) repair the hose with a patch

*If choice A is selected set score to 1.*

8. Which of the following describes heavy fuel oils when they have been spilled?

- (A) they are more harmful to sea life than lighter oils
- (B) they are less harmful to sea life than lighter oils
- (C) they are not a real threat to marine life
- (D) they are easier to clean up than lighter refined oils

*If choice B is selected set score to 1.*

9. If a repair team is to enter a confined space for repair work, what minimum level of oxygen should be present?

- (A) 18%
- (B) 19%
- (C) 20%
- (D) 21%

*If choice D is selected set score to 1.*
10. Which statement is TRUE concerning combustible gas indicators?

- (A) They are calibrated to read the percentage chance of explosion.
- (B) They do not work properly where there is a lack of oxygen.
- (C) They will detect a lack of oxygen.
- (D) One sample of air is adequate to test a tank.

If choice B is selected set score to 1.

11. Which topic is NOT required to be discussed at the pre-transfer conference?

- (A) Estimated time of finishing cargo
- (B) Details of transferring and receiving systems
- (C) Emergency shutdown procedures
- (D) Identity of the product to be transferred

If choice A is selected set score to 1.

12. Oil product samples should be taken at the commencement and completion of loading operations. As the person in charge, where should the final samples be taken?

- (A) the dock riser
- (B) the vessel's cargo tanks
- (C) the shoreline low points
- (D) the shore tank discharge

If choice B is selected set score to 1.

13. What is a cofferdam?

- (A) Tube fitted to an ullage hole
- (B) Void or empty space separating two tanks
- (C) Opening in the deck used for cleaning a tank
- (D) Area the product is loaded into

If choice B is selected set score to 1.

14. During oil transfer operations, who would be responsible to guarantee that the posted transfer procedures are being followed?

- (A) The designated person in charge
- (B) The senior able seaman
- (C) The tankerman
- (D) The oiler

If choice A is selected set score to 1.
15. What are flame screens used for?
   - (A) prevent flames from entering tanks
   - (B) keep flames and sparks from getting out of an engine's exhaust system
   - (C) contain flammable fumes
   - (D) protect firefighters from flames

   If choice A is selected set score to 1.

16. When you notice oil on the water near your vessel while taking on fuel, what should your first action be?
   - (A) notify the terminal superintendent
   - (B) determine whether your vessel is the source
   - (C) stop loading
   - (D) notify the senior deck officer

   If choice C is selected set score to 1.

17. What is the distance between the surface of the liquid and the tank top in a cargo tank called?
   - (A) Ullage
   - (B) Tankage
   - (C) Thievage
   - (D) Innage

   If choice D is selected set score to 1.

18. What is the lowest temperature at which a liquid will give off sufficient vapors to form a flammable mixture with air?
   - (A) flash point
   - (B) threshold limit value
   - (C) fire point
   - (D) lower explosive limit

   If choice A is selected set score to 1.

19. Which factor must be considered when determining the order of loading of dissimilar products through the same piping system aboard a tanker?
   - (A) Specific gravities
   - (B) Contamination of the cargo
   - (C) Flash points
   - (D) Reid vapor pressures

   If choice B is selected set score to 1.
20. Which of the following is the pipe used to connect two separate piping systems on a tank vessel?

- (A) crossover
- (B) transfer
- (C) connection
- (D) junction

*If choice (A) is selected set score to 1.*

21. Which of the following is equivalent to a "barrel", which is a unit of liquid measure?

- (A) 43 U.S. gallons at 65°F
- (B) 42 U.S. gallons at 60°F
- (C) 45 U.S. gallons at 75°F
- (D) 40 U.S. gallons at 50°F

*If choice (B) is selected set score to 1.*

22. Which statement about the use of portable electric lights in petroleum product tanks is TRUE?

- (A) No portable electric equipment of any type is allowed.
- (B) They can be used only when the compartment is gas free.
- (C) They must be explosion-proof, self-contained, battery-fed lamps.
- (D) The fixture must be explosion-proof and the line must have a ground wire.

*If choice (C) is selected set score to 1.*

23. Your tank vessel is loaded down to her marks, and you find that she has too much trim by the stern. What action should you take to obtain an even keel and still maintain profitability?

- (A) load more cargo forward
- (B) add ballast forward
- (C) shift bunkers forward
- (D) discharge cargo amidships

*If choice (C) is selected set score to 1.*

24. What should be the first consideration when discharging an oil cargo?

- (A) discharge from amidships first
- (B) discharge from the wings first
- (C) get the bow up
- (D) discharge from the centerline tanks first

*If choice (C) is selected set score to 1.*
25. You start a centrifugal cargo pump to discharge cargo. The pump works fine for a while and then loses suction. What could have caused this?

- (A) the pump running backwards
- (B) the discharge head being too high
- (C) incomplete priming
- (D) head pressure on the suction side of the pump

*If choice C is selected set score to 1.*

26. How should pinching of the cargo hose between the vessel and the dock be prevented?

- (A) tying off the topping lifts and runners to winch heads
- (B) laying out an excess length of hose on deck
- (C) adjusting the hose supports
- (D) install hose preventers

*If choice C is selected set score to 1.*

27. What is the lowest temperature at which the vapors of a flammable liquid will ignite and cause self-sustained combustion in the presence of a spark or flame?

- (A) flash point
- (B) fire point
- (C) autoignition temperature
- (D) vaporization temperature

*If choice B is selected set score to 1.*

28. According to U.S. regulations, which of the following does not qualify as a discharge of oil?

- (A) Discharging oil into the sea for pollution research.
- (B) Spilling oil on the main deck and having it flow over the side.
- (C) Leakage of oil to the water by an improperly blanked transfer hose.
- (D) Pumping oil overboard through a fixed piping system.

*If choice A is selected set score to 1.*

29. Under which of the following conditions will the blowers of an inert gas generation system aboard a tanker remain operational?

- (A) the cooling water supply to the scrubbers is lost
- (B) The tank atmosphere above 8% oxygen
- (C) boiler combustion control indicates high oxygen level
- (D) high temperature of the inert gas being delivered to the cargo tanks

*If choice B is selected set score to 1.*
30. The intakes for an air compressor on a tank vessel carrying grade A cargo may be located in which of the following areas?

- (A) An area aft of the cargo area 2.5 meters vertically above the deck
- (B) A cargo handling room
- (C) An enclosed space connected to the cargo handling room
- (D) An enclosed machinery space containing cargo piping

*If choice A is selected set score to 1.*

31. On a tanker vessel, what is the required combined capacity of the inert gas generating system as compared to the total capacity of all the cargo pumps which can be operated simultaneously?

- (A) 50%
- (B) 75%
- (C) 100%
- (D) 125%

*If choice D is selected set score to 1.*

32. When providing first aid to a victim of gas poisoning, what is the MOST important symptom to check for?

- (A) suspension of breathing
- (B) unconsciousness
- (C) cold and moist skin
- (D) slow and weak pulse

*If choice A is selected set score to 1.*

33. Which of the following is the chief source of spontaneous combustion aboard tankers?

- (A) kerosene cargo
- (B) JP4 cargo
- (C) gasoline cargo
- (D) oil soaked rags or rubbish

*If choice D is selected set score to 1.*

34. While loading bulk oil, you notice oil on the water near the barge. Which of the following actions should you carry out FIRST?

- (A) Search the vessel for leaks
- (B) Notify the Coast Guard
- (C) Stop loading
- (D) Notify terminal superintendent

*If choice C is selected set score to 1.*
35. The sign used to caution persons approaching the gangway of a tank barge during cargo transfer should state which of the following?

- (A) "Dangerous Cargo Being Transferred"
- (B) "Warning, Keep Off, Stay Clear"
- (C) "Warning, No Smoking, No Open Lights, No Visitors"
- (D) "Danger, Do Not Board"

*If choice C is selected set score to 1.*

36. Before a tank is to be crude oil washed, what position must the oxygen content in the tank must be measured at?

- (A) in the vent riser
- (B) at the top of the tank
- (C) one meter from the deck
- (D) immediately above the level of the oil

*If choice C is selected set score to 1.*

37. When the inert gas system is temporarily unable to maintain a positive pressure, or an oxygen content less than 8%, how should cargo operations be adjusted?

- (A) operations should continue at a slower rate until these requirements are met
- (B) operations should continue only under "Emergency Procedures"
- (C) operations should be monitored more frequently
- (D) operations should be shut down immediately

*If choice D is selected set score to 1.*

38. Your vessel is taking on cargo oil when a small leak develops in the hose. You order the pumping stopped. Before you resume pumping, which of the following action should you perform?

- (A) replace the hose
- (B) repair the hose with a patch
- (C) place a large drip pan under the leak and plug the scuppers
- (D) notify the terminal superintendent

*If choice A is selected set score to 1.*

39. What do the designations A, B, C, D, and E refer to in grades of cargo?

- (A) grades of crude oil
- (B) degrees of quality of petroleum products
- (C) pour point, color, and viscosity index of petroleum products
- (D) flash point range and Reid vapor pressure index of petroleum products

*If choice D is selected set score to 1.*
40. Which of the following does not require cargo transfer operations on a tank vessel to be stopped?

- (A) a large, fresh oil spill is discovered immediately adjacent to the side of the tanker
- (B) there is an electrical storm in the vicinity
- (C) there is a fire on the dock or on a nearby vessel
- (D) a tug comes alongside while the tanker is loading grade D and E cargoes

*If choice D is selected set score to 1.*

41. When loading a tanker, you should perform which of the following functions to ensure a safe operation?

- (A) load only one tank at a time
- (B) close valves by closing them down, re-opening one or two turns, and re-closing
- (C) keep a strain on the loading hoses
- (D) keep the seamen on watch on standby in the messroom

*If choice B is selected set score to 1.*

42. What is NOT a precaution to be taken when topping off?

- (A) Maintain communications with the dock man.
- (B) Give the operation your undivided attention.
- (C) Notify the engine room of the procedure.
- (D) Reduce the loading rate.

*If choice C is selected set score to 1.*

43. Protective clothing must be worn while sampling hazardous cargo on a tankship. This clothing includes which of the following at a minimum?

- (A) boots
- (B) a hood or hard hat
- (C) chemical resistant gloves
- (D) a face mask or goggles

*If choice D is selected set score to 1.*

44. According to U.S. regulations, which conditions would not disqualify a nonmetallic hose as being suitable for use in transferring oil?

- (A) A leak in the flange gasket while hydrostatically testing the hose.
- (B) Evidence of internal or external deterioration.
- (C) A small cut in the hose cover which just pierces the reinforcement.
- (D) A slight oil seepage between the hose and flange connection.

*If choice A is selected set score to 1.*
45. On tankers using manually operated tank valves, what does the deck hand wheel indicator register?

- (A) exact lift position of the tank valve disk, through 100% of its operation
- (B) approximate number of turns the tank valve has been opened
- (C) level of oil in the tank
- (D) oxygen content of the tank

*If choice B is selected set score to 1.*

46. Each pressure gage used in an oil transfer operation must be accurate to within what percent?

- (A) 1 percent
- (B) 3 percent
- (C) 5 percent
- (D) 10 percent

*If choice D is selected set score to 1.*

47. The condition of asphyxia arises from which of the following?

- (A) sleep deprivation
- (B) improper caloric intake
- (C) too much oxygen
- (D) an inadequate supply of oxygen

*If choice D is selected set score to 1.*

48. What is the minimum temperature required to ignite gas or vapor without a spark or flame being present called?

- (A) flash point
- (B) autoignition temperature
- (C) lower explosive limit
- (D) fire point

*If choice B is selected set score to 1.*

49. According to U.S. regulations, no person may connect or disconnect an oil transfer hose or engage in any other critical oil transfer operation on a tank vessel unless which of the following is met?

- (A) the designated person in charge supervises that procedure
- (B) that person holds a valid port security card
- (C) that person holds a license as master, mate, or engineer
- (D) that person holds a tankerman assistant endorsement

*If choice A is selected set score to 1.*
50. Which of the following conditions will cause a combustible gas indicator to become inoperative or give erroneous readings?

- (A) compartment to be tested is free of CO$_2$
- (B) hydrocarbon content of the atmosphere is less than the upper explosive limit
- (C) atmosphere has sufficient oxygen
- (D) inerted content of the atmosphere is less than the lower explosive limit

*If choice B is selected set score to 1.*