U.S.C.G. Merchant Marine Exam

Tankerman Assistant

Q457 Tankship Liquefied Gases

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

1. What term is not considered a "discharge" as it applies to the U.S. pollution regulations?
   - (A) pumping a harmful substance
   - (B) leaking diesel fuel oil
   - (C) sampling a harmful substance
   - (D) spilling a harmful substance

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

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

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

3. When loading bulk liquid cargo, what is the first action you should take if a cargo valve jammed open?
   - (A) Run out the vessel or terminal fire hose.
   - (B) Call the owner, operator, or terminal supervisor.
   - (C) Unplug the deck scuppers.
   - (D) Order the dock man to shut down.

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

4. Which of the following terms best describes the amount of product in a tank measured from the tank top to the level of liquid?
   - (A) Thievage
   - (B) Ullage
   - (C) Outage
   - (D) Innage

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

5. Which statement is TRUE concerning insulating flanges?
   - (A) They should be inspected and tested periodically to ensure that the insulation is clean and in good condition.
   - (B) After the insulating flange is installed, hot-work may be performed on deck.
   - (C) The measured resistance value after installation should be less than 1,000 ohms.
   - (D) Switching off a cathodic protection system may be substituted for using an insulating flange.

   *If choice A is selected set score to 1.*
6. What are the primary concern(s) for safely transporting and handling liquefied gas?
   - (A) cargo tanks and piping located or protected to minimize physical damage
   - (B) cargo tanks and piping strong enough to withstand the pressure
   - (C) a system of cargo tanks and piping free from leaks
   - (D) All of the above

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

7. You have berthed in a port area with other tank vessels. What signal is displayed by a vessel to indicate it is transferring flammable or combustible liquid cargo?
   - (A) A green light visible all around the horizon
   - (B) A flashing yellow light
   - (C) A red light visible all around the horizon
   - (D) An illuminated red and yellow caution flag

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

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

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

9. Which alarm is NOT found on an inert gas system?
   - (A) Deck seal low water alarm
   - (B) Low pressure alarm
   - (C) Scrubber high water level alarm
   - (D) Low oxygen alarm

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

10. How is an inert gas system designed to reduce the possibility of tank explosions?
    - (A) by eliminating sparks and fire in the vicinity of cargo tanks
    - (B) by removing all hydrocarbon gases from the cargo tanks
    - (C) by blanketing cargo tanks with inert foam
    - (D) by reducing the oxygen concentration below levels necessary for combustion

    *If choice D is selected set score to 1.*
11. When loading bulk liquid cargo, what is the FIRST action you should take if a cargo valve jammed open?

- (A) Run out the vessel or terminal fire hose.
- (B) Order the dock man to shut down.
- (C) Trip the pump relief valve.
- (D) Call the owner, operator, or terminal supervisor.

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

12. When discharging a tanker, how can list be controlled?

- (A) by using the after peak tank, loading as necessary
- (B) by using a center tank near the bow, discharging as necessary
- (C) by using wing tanks near the longitudinal center, discharging as necessary
- (D) by shoreside personnel

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

13. Remote controls for quick-closing shut off valves are required in how many location(s)?

- (A) 1
- (B) 2
- (C) 3
- (D) 4

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

14. Span gas is used for what process?

- (A) To calibrate a gas analyzer to ensure it indicates correct gas concentrations.
- (B) The name of a gaseous state when the temperature of the vapor is the same as that of the liquid.
- (C) To insure an inert atmosphere during the span of time when a system is being brought to a dry air condition from a flammable atmosphere.
- (D) To find the zero point on a gas analyzer.

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

15. According to U.S. regulations, tank vessels are required to have a means of emergency shutdown. This device does which of the following?

- (A) shuts off the main propulsion plant
- (B) shuts off the firefighting foam systems
- (C) stops the flow of oil to shore facility or other vessel
- (D) secures electrical power to all motors

*If choice C is selected set score to 1.*
16. Which of the following describes intrinsically safe equipment?

   o (A) an electrical circuit normally limited to instrumentation in hazardous areas
   • (B) an electrical circuit in which a spark is incapable of causing the ignition of a given explosive mixture
   o (C) electrical circuits under 2 amperes
   o (D) electrical circuits under 12 volts

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

17. According to 46 CFR there are specific alarms that are required to be tested prior to cargo transfer. Which of the following items does not require testing?

   o (A) high level visual alarm
   • (B) low liquid level alarms
   o (C) quick closing loading valves
   o (D) high level audible alarm

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

18. What do the emergency shutdown requirements of U.S. regulations apply to?

   o (A) condensate pumps
   o (B) air compressors
   o (C) induced draft fans
   • (D) cargo transfer systems

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

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

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

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

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

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

   *If choice D is selected set score to 1.*
21. Your vessel is securely moored to the berth preparing to discharge a cargo of LPG. Which of the following items would not comply with a "Safety Checklist" and should be corrected?

- (A) cargo tanks atmosphere pressure is positive, with an oxygen content of 8% or below
- (B) the fixed and portable oxygen analyzers are calibrated and operational
- (C) the inert gas system deck water seal is drained and secured
- (D) there is sufficient pump room ventilation

If choice C is selected set score to 1.

22. Who enforces the U.S. pollution regulations that apply to ships?

- (A) U.S. Coast Guard
- (B) State Pollution Board
- (C) Port Authority
- (D) Corps of Engineers

If choice A is selected set score to 1.

23. What does the MARPOL 73/78 convention deal with?

- (A) International Convention of Safety of Life at Sea
- (B) International Convention on Standards of Training Certification and Watchkeeping
- (C) International Convention for the Prevention of Pollution from Ships
- (D) International Marine Organization Gas Carrier Code

If choice C is selected set score to 1.

24. Who must supervise functions aboard a tanker or tank barge such as connecting, disconnecting, and topping off?

- (A) the master of the vessel
- (B) the person designated as "person in charge"
- (C) the officer of the watch
- (D) any certificated tankerman

If choice B is selected set score to 1.

25. Which of the following is the pipe used to connect two separate piping systems on a tank vessel?

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

If choice C is selected set score to 1.
26. When loading a tanker, you should perform which of the following functions to ensure a safe operation?

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

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

27. Cryogenic burns can result in frostbite, what is the proper immediate treatment?

- (A) Compress the affected area with cryogenic burn heat wrap.
- (B) Massage the affected area.
- (C) Warm the area quickly by placing it in water at 108°F until it has thawed.
- (D) Apply ice to the area and gradually warm.

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

28. The term "segregated ballast" is defined in the U.S. regulations as ballast water introduced into which of the following?

- (A) oily-water separator for segregation
- (B) isolated tank for analysis because of its noxious properties
- (C) fuel settling tank for segregation from lighter fluids
- (D) tank that is completely separated from the cargo oil and fuel oil systems

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

29. In reference to accidental oil pollution, the most critical time during bunkering is when __________.

- (A) hoses are being disconnected
- (B) hoses are being blown down
- (C) you first start to receive fuel
- (D) final topping off is occurring

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

30. Which refers to the depth of a petroleum product in a tank?

- (A) Outage
- (B) Ullage
- (C) Thievage
- (D) Innage

*If choice D is selected set score to 1.*
31. Which of the following defines flammable liquids for the purpose of U.S. regulations?

- (A) liquids that give off flammable vapors only above 80°F (27°C)
- (B) liquids that sustain combustion at a temperature at or below 100°F (38°C)
- (C) liquids that have a Reid vapor pressure of 18 pounds or more
- (D) liquids that give off flammable vapors at or below 80°F (27°C)

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

32. Why is a warning sign displayed at the gangway or access point of a barge during cargo transfer?

- (A) To designate smoking areas
- (B) To indicate any health risk if applicable
- (C) To keep visitors away from the barge
- (D) To indicate if the cargo is a marine pollutant

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

33. Who is responsible for the final inspection ensuring a tank barge is provided with the required equipment and has fittings in good and serviceable condition prior to loading cargo?

- (A) tankerman or person in charge of loading
- (B) terminal operator
- (C) owner of the barge
- (D) charterer through the master of the towing vessel

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

34. 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.*

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

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

*If choice D is selected set score to 1.*
36. In what condition is LNG transported?

- (A) At its critical temperature.
- (B) At a pressure in excess of 15.4 psia.
- (C) At its boiling point.
- (D) At its vapor stage.

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

37. 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 not a real threat to marine life
- (C) They are less harmful to sea life than lighter oils
- (D) They are easier to clean up than lighter refined oils

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

38. Which is NOT a safety precaution to be observed during the loading of Liquefied Gas?

- (A) Ascertain that the hoses to be used are in good order.
- (B) Be on the lookout for work being accomplished ashore in the vicinity of the barges.
- (C) Make sure the rake ends of the barge are completely dry and mopped.
- (D) Report any leakage of cargo.

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

39. 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 tankerman assistant endorsement
- (C) that person holds a valid port security card
- (D) that person holds a license as master, mate, or engineer

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

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

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

*If choice C is selected set score to 1.*
41. U.S. regulations state that a person may not transfer oil or hazardous materials to or from a vessel unless each person in charge has signed which of the following documents?

- (A) valve inspection record
- (B) machinery log
- (C) Declaration of Inspection
- (D) Oil Record Book

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

42. Your tank vessel is fully loaded to the marks, and you find that she is down slightly by the head. Which of the following choices would be the best action to take to trim the vessel slightly by the stern?

- (A) shift ballast from the aft to forward
- (B) shift cargo aft
- (C) load more cargo aft
- (D) add ballast aft

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

43. If you observe any situation which presents a safety or pollution hazard during the fuel transfer operations, which action should you take FIRST?

- (A) Shut down the operation.
- (B) Close the valves at the manifold.
- (C) Sound the general alarm.
- (D) Notify the person in charge of the shore facility.

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

44. Who completes the Declaration of Inspection before loading a tank vessel?

- (A) The American Bureau of Shipping.
- (B) The US Coast Guard.
- (C) The manager of the shore facility.
- (D) The designated person in charge.

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

45. Which of the following conditions will cause a combustible gas indicator to become inoperative or give erroneous readings?

- (A) inerted content of the atmosphere is less than the lower explosive limit
- (B) atmosphere has sufficient oxygen
- (C) compartment to be tested is free of CO₂
- (D) hydrocarbon content of the atmosphere is less than the upper explosive limit

*If choice D is selected set score to 1.*
46. Which of the following procedures would insure proper seating of the valve when closing?

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

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

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

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

48. U.S. regulations require an emergency means of stopping the flow of oil or LNG during transfer operations. The emergency means may be which of the following?

- (A) automatic pressure-sensitive oil flow regulator
- (B) self-closing automatic disconnect fitting
- (C) manually-operated quick-closing valve
- (D) emergency pump control on the cargo deck

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

49. The boiling point of Methane is -161°C. How is the substance carried?

- (A) Fully refrigerated.
- (B) Fully pressurized.
- (C) Normal ambient temperature.
- (D) Atmospheric pressure.

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

50. Which of the following describes the flash point temperature of a liquid?

- (A) at which a liquid will explode
- (B) that a liquid must reach before it will flow readily
- (C) at which a liquid will give off inflammable vapors
- (D) at which a liquid will burn steadily

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