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Q320 - Deck General

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

- **crossover**
- connection
- junction
- transfer

Note:

A crossover is the pipe that connects two separate piping systems on a tank vessel, enabling fluid transfer between them. This is the standard technical term, unlike 'connection,' 'junction,' or 'transfer,' which are generic. Understanding crossovers is crucial for safe cargo routing and equalization on tank vessels.

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

- 43 U.S. gallons at 65°F
- **42 U.S. gallons at 60°F**
- 40 U.S. gallons at 50°F
- 45 U.S. gallons at 75°F

Note:

A barrel is defined as 42 U.S. gallons at 60F.

3. What is the standard net barrel for petroleum products?

- 48 gallons at 70°Fahrenheit
- 50 gallons at 50°Celsius
- **42 gallons at 60°Fahrenheit**
- 60 gallons at 100°Saybolt

Note:

The standard net barrel for petroleum products is defined as 42 U.S. gallons at 60F, a measurement used for contracts and documentation to ensure consistent quantity reporting regardless of temperature fluctuations.

4. On tankers using manually operated tank valves, what does the deck hand wheel indicator register?

- exact lift position of the tank valve disk, through 100% of its operation
- oxygen content of the tank
- **approximate number of turns the tank valve has been opened**
- level of oil in the tank

Note:

The deck hand wheel indicator on tankers with manually operated tank valves registers the approximate number of turns the valve has been opened due to mechanical limitations and slack in the linkage system; it does not provide precise valve disk position, tank atmosphere readings, or liquid level information.

5. On tankers with manually operated tank valves, which of the following is the type of valve most commonly used?

- globe valve
- check valve
- **gate valve**
- butterfly valve

Note:

Gate valves are the most common manually operated tank valves on tankers due to their full-bore design, low flow resistance, and tight shutoff, making them suitable for large cargo lines and typical isolation valve operation. Globe valves are for throttling, check valves are automatic, and butterfly valves are less common for this application.

6. Which of the following procedures would ensure proper seating of the valve when closing?

- closed against the stop and the locking pin inserted
- **closed, opened a half turn, and then closed again**
- set up tight using a valve wrench
- set up as tight as possible by hand

Note:

Closing a valve, opening it slightly, and then reclosing allows the disc to align evenly on the seat, ensuring a proper seal without excessive force or potential damage.

7. Which of the following applies to cargo tank safety valves?

- are not held closed by tank pressure
- can be opened by pilot valves
- are not to be "popped" in port
- **all of the above**

Note:

Cargo tank safety valves are spring-loaded, often pilot-operated, and must not be manually activated in port. All statements accurately describe these valves, making 'all of the above' the correct answer.

8. On many modern tankers, which of the following devices is used to reduce cargo pump leakage to the pump room bilge?

- Flinger rings
- **Mechanical seals**
- Shaft sleeves
- Clipper seals

Note:

Mechanical seals minimize leakage along a rotating pump shaft, preventing cargo from entering the pump room bilge. Traditional packed glands allow leakage, while flinger rings, shaft sleeves, and clipper seals serve different functions and do not provide a primary, low-leakage seal.

9. What is the purpose of the relief valve of a cargo pump?

- Allows two or more tanks to be filled at the same time
- Provides for the removal of vapors
- Provides for the emergency shutdown of the pump
- **Permits the return of cargo to the suction side of the pump**

Note:

The cargo pump relief valve protects the system from overpressure by returning liquid to the suction side.

10. What type of valve is usually on the discharge side of a cargo pump on a tank vessel?

- spectacle valve
- butterfly valve
- **check valve**
- globe valve

Note:

A check valve is installed on the discharge side of a cargo pump to prevent backflow and protect the pump.
