



Liquefied Gas Tanker Cargo Operations (LGTCO)

30 Practice Questions and Answers for STCW Exams

Updated for DG Shipping India Exams | Source: brightmariner.com

Practice Set 1

Q1. What does LGTF stand for in maritime STCW training?

- A) Low Temp Facility
- B) Liquid Gas Fleet
- C) Gas Tanker Firefighting
- D) Basic Training for Liquefied Gas Tanker Cargo Operations

Correct Answer: D (Basic Training for Liquefied Gas Tanker Cargo Operations)

Explanation: LGTF provides basic STCW V/1-2 training for gas carrier personnel.

Q2. What are the two main categories of liquefied gas cargoes carried in bulk?

- A) Water and Palm Oil
- B) HFO and Diesel
- C) LNG (Liquefied Natural Gas) and LPG (Liquefied Petroleum Gas)
- D) Crude and Bitumen

Correct Answer: C (LNG (Liquefied Natural Gas) and LPG (Liquefied Petroleum Gas))

Explanation: LNG (mostly Methane) and LPG (Propane, Butane, Ammonia) represent the main gas trades.

Q3. What is cryogenic temperature range in gas shipping?

- A) 0 degreesC
- B) Ambient +20 degreesC
- C) Extremely low temperatures below -50 degreesC (e.g. LNG at -162 degreesC)
- D) Above +100 degreesC

Correct Answer: C (Extremely low temperatures below -50 degreesC (e.g. LNG at -162 degreesC))

Explanation: Cryogenic liquids exist at ultra-low temperatures requiring special alloy metallurgy.

Q4. What injury occurs if human skin contacts cryogenic liquid gas?

- A) Severe frostbite / Cold thermal burns
- B) Sunburn
- C) Skin tanning
- D) Heat stroke

Correct Answer: A (Severe frostbite / Cold thermal burns)

Explanation: Cryogenic liquids freeze body tissue instantly, causing severe frostbite burns.

Q5. What happens to liquid gas if spilled onto seawater?

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- A) Rapid boiling and phase change into large gas vapor clouds
- B) Sinks as solid rock
- C) Dissolves into salt
- D) Turns into diesel

Correct Answer: A (Rapid boiling and phase change into large gas vapor clouds)

Explanation: Cryogenic liquid absorbs heat from sea water, expanding rapidly into gas clouds.

Q6. How is LPG maintained liquid at ambient temperature in pressurized ships?

- A) High pressure inside Type C pressure vessel tanks (~18 bar)
- B) Mixing with sand
- C) Steam heating
- D) Adding salt

Correct Answer: A (High pressure inside Type C pressure vessel tanks (~18 bar))

Explanation: Pressurized LPG carriers hold cargo at ambient temp under high pressure (~18 bar).

Q7. What gas detector measures low levels of flammable gas in air?

- A) Hydrometer
- B) Salinometer
- C) Explosimeter (Combustible Gas Indicator)
- D) Thermocouple

Correct Answer: C (Explosimeter (Combustible Gas Indicator))

Explanation: Explosimeters measure flammable gas concentrations as % LEL.

Q8. What code sets international safety standards for gas carrier construction?

- A) IBC Code
- B) IMDG Code
- C) IGC Code
- D) IMSBC Code

Correct Answer: C (IGC Code)

Explanation: The International Gas Carrier (IGC) Code governs gas ship design and operation.

Q9. What is the liquid-to-gas expansion ratio of LNG when vaporized at atmospheric pressure?

- A) Approximately 1 : 600
- B) 1 : 2
- C) 1 : 10
- D) 1 : 10000

Correct Answer: A (Approximately 1 : 600)

Explanation: 1 volume of liquid LNG expands into ~600 volumes of methane gas at ambient conditions.



- A) Foam blanket
- B) Steam barrier
- C) Water spray curtain system
- D) Air curtain

Correct Answer: C (Water spray curtain system)

Explanation: Water spray curtains provide heat shielding and warm up spilled gas liquid.

Q11. Under STCW Code Table A-V/1-2, what is the mandatory requirement regarding regulatory compliance and STCW code requirements during Advanced Liquefied Gas Operations operations?

- A) Strict compliance with approved safety procedures and flag state regulations
- B) Applicable only during drydock operations
- C) Verbal recommendation without documentation
- D) Optional adherence based on vessel size

Correct Answer: A (Strict compliance with approved safety procedures and flag state regulations)

Explanation: STCW Code Table A-V/1-2 mandates strict compliance with approved safety protocols for Advanced Liquefied Gas Operations.

Q12. What specific safety precaution must be observed when managing regulatory compliance and STCW code requirements for Advanced Liquefied Gas Operations on board?

- A) Conducting a thorough risk assessment and briefing all involved personnel prior to starting work
- B) Delegating tasks exclusively to untrained crew members
- C) Proceeding without informing the officer on watch
- D) Disabling automated safety alarms to save time

Correct Answer: A (Conducting a thorough risk assessment and briefing all involved personnel prior to starting work)

Explanation: Risk assessments and pre-job briefings ensure all team members understand hazards during Advanced Liquefied Gas Operations operations.

Q13. What PPE is required when connecting cryogenic cargo hoses?

- A) Raincoat
- B) Bare hands
- C) Insulated cryogenic gloves, face shield, safety boots, and full coveralls
- D) Cotton gloves

Correct Answer: C (Insulated cryogenic gloves, face shield, safety boots, and full coveralls)

Explanation: Cryogenic gloves and face protection guard against cold liquid sprays and frostbite.

Q14. What gas is used to purge oxygen from cargo tanks before loading gas?

- A) Compressed air
- B) Oxygen
- C) Inert gas or Nitrogen (N2)
- D) Carbon monoxide

Correct Answer: C (Inert gas or Nitrogen (N2))

Explanation: Inerting reduces oxygen concentration below 5% to prevent flammable mixtures.



- A) Boiler steam
- B) Compressed air
- C) Engine exhaust
- D) Vapor generated continuously due to heat ingress through tank insulation

Correct Answer: D (Vapor generated continuously due to heat ingress through tank insulation)

Explanation: BOG forms constantly as cryogenic liquid absorbs small amounts of heat.

Q16. What risk occurs if liquid gas is trapped between two closed line valves?

- A) Vacuum formation
- B) Hydraulic expansion pressure rise bursting the pipe line
- C) Permanent freezing
- D) Pipe color change

Correct Answer: B (Hydraulic expansion pressure rise bursting the pipe line)

Explanation: Warming liquid gas expands immensely; thermal relief valves prevent pipe rupture.

Q17. What is the function of an Emergency Shutdown (ESD) system on gas carriers?

- A) Drop anchor
- B) Open tank lids
- C) Turn off lights
- D) Stop pumps/compressors and close ESD manifold valves in emergency

Correct Answer: D (Stop pumps/compressors and close ESD manifold valves in emergency)

Explanation: ESD systems isolate cargo lines within 30 seconds of emergency trip activation.

Q18. What gas property makes Ammonia (NH₃) hazardous to crew?

- A) Odorless and sweet
- B) Inert behavior
- C) Severe toxicity, respiratory irritation, skin burns, and suffocating odor
- D) Heavy soot

Correct Answer: C (Severe toxicity, respiratory irritation, skin burns, and suffocating odor)

Explanation: Ammonia is toxic, reactive with copper, and corrosive to human tissue.

Q19. What fire extinguisher type is installed on gas carrier cargo decks?

- A) Foam monitors only
- B) Dry Chemical Powder (DCP)
- C) Sand buckets
- D) Soda-acid

Correct Answer: B (Dry Chemical Powder (DCP))

Explanation: DCP is specified under IGC Code as primary extinguishing agent for gas fires.



- A) Thermometer
- B) Continuous gas sampling and differential pressure monitoring system
- C) Sounding tape
- D) Salinometer

Correct Answer: B (Continuous gas sampling and differential pressure monitoring system)

Explanation: Hold spaces and insulation layers are continuously sampled for trace gas leakage.

Q21. What is the danger of cold methane gas clouds near deck level?

- A) Non-flammable
- B) Cold methane is heavier than air initially, forming low flammable vapor clouds
- C) Floats to space instantly
- D) Turns to water drops

Correct Answer: B (Cold methane is heavier than air initially, forming low flammable vapor clouds)

Explanation: Cold methane gas (-162 degreesC) is denser than air and stays low until warmed.

Q22. What first aid treatment is given for cryogenic frostbite on hands?

- A) Immerse in warm water bath (40 degreesC - 42 degreesC); DO NOT rub
- B) Apply grease
- C) Hold near open fire
- D) Rub with snow

Correct Answer: A (Immerse in warm water bath (40 degreesC - 42 degreesC); DO NOT rub)

Explanation: Warm water rewarming (40-42 degreesC) restores circulation without causing tissue damage.

Q23. Which international regulation specifies the minimum standard for regulatory compliance and STCW code requirements concerning Advanced Liquefied Gas Operations?

- A) Port State Control advisory note only
- B) International Load Line Certificate Annex 3
- C) STCW Code Section A-V/1-2 and relevant SOLAS/MARPOL conventions
- D) Tonnage Measurement Convention 1969

Correct Answer: C (STCW Code Section A-V/1-2 and relevant SOLAS/MARPOL conventions)

Explanation: STCW Code Section A-V/1-2 sets international standards for training and operational competency in Advanced Liquefied Gas Operations.

Q24. In the event of an emergency involving regulatory compliance and STCW code requirements during Advanced Liquefied Gas Operations tasks, what immediate action is required?

- A) Attempt to resolve the incident silently without raising the alarm
- B) Wait until the end of the watch to log the issue
- C) Evacuate the vessel immediately without informing the bridge
- D) Raise the alarm, notify the Officer of the Watch, and execute assigned muster list duties

Correct Answer: D (Raise the alarm, notify the Officer of the Watch, and execute assigned muster list duties)

Explanation: Prompt alarm activation ensures emergency response teams can mobilize immediately.



- A) Vent gas into ocean
- B) Compress and cool boil-off gas, returning it as liquid to cargo tanks
- C) Burn BOG in boilers
- D) Convert LPG to diesel

Correct Answer: B (Compress and cool boil-off gas, returning it as liquid to cargo tanks)

Explanation: Reliquefaction units condense BOG back into liquid LPG to control tank pressure.

Q26. What containment system uses self-supporting spherical aluminum tanks?

- A) Gaztransport membrane
- B) Technigaz Mark III
- C) Moss Rosenberg spherical system
- D) Flat bottom tank

Correct Answer: C (Moss Rosenberg spherical system)

Explanation: Moss spheres are independent Type B tanks recognized by spherical domes.

Q27. What safety checklist must be completed before gas cargo operations?

- A) Bill of Lading
- B) Custom Manifest
- C) SIGTTO / ISGOTT Ship-Shore Safety Checklist
- D) Passenger List

Correct Answer: C (SIGTTO / ISGOTT Ship-Shore Safety Checklist)

Explanation: The Ship-Shore Safety Checklist ensures manifold, ESD, and fire systems are verified.

Q28. What is the Lower Explosive Limit (LEL) of Methane gas in air?

- A) 0.1%
- B) 50%
- C) 20%
- D) Approximately 5% by volume

Correct Answer: D (Approximately 5% by volume)

Explanation: Methane becomes flammable in air starting at 5% volume concentration (LEL).

Q29. What risk is associated with sudden temperature drop during cargo tank cool-down?

- A) Paint peeling
- B) Rust growth
- C) Short circuit
- D) Thermal shock cracking of tank metal bulkheads and pipe joints

Correct Answer: D (Thermal shock cracking of tank metal bulkheads and pipe joints)

Explanation: Rapid uneven cooling causes high thermal stresses leading to structural metal fractures.



- A) Emergency Release Coupling (ERC) / PERS
- B) Non-return flap
- C) Hand valve
- D) Butterfly valve

Correct Answer: A (Emergency Release Coupling (ERC) / PERS)

Explanation: PERS/ERC isolates and uncouples loading arms instantly during emergency breakaway.