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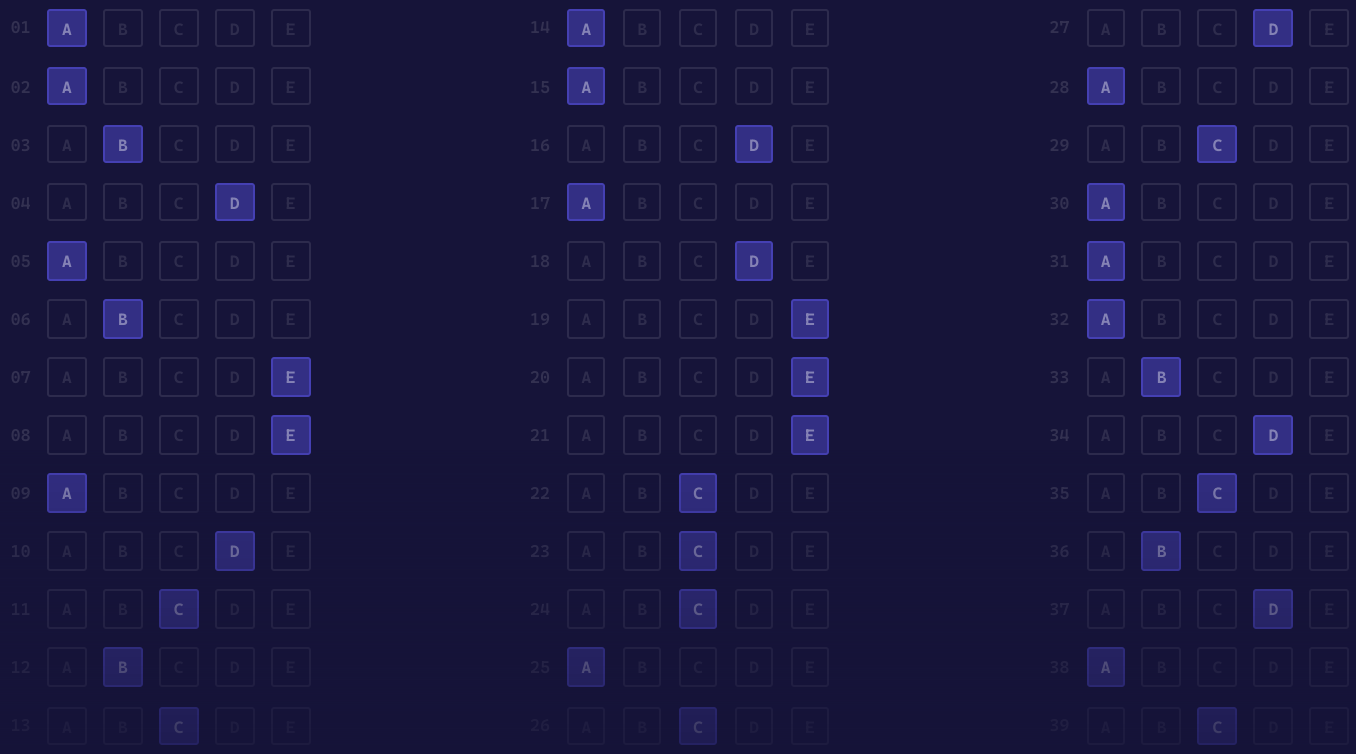

PRACTICE QUESTIONS

Technical Standards and Safety Authority (TSSA)

GUT–1

Gas Utility Technician 1

EDITION	QUESTIONS	FORMAT
Demo	9	Limited Edition PDF

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Before you begin

What this is

9 practice questions for Technical Standards and Safety Authority (TSSA) `GUT-1`, each with its answer key and an explanation. Answer a question before you read its key — the explanation is worth more once you have committed.

If something looks wrong

Send us three things and we will check it:

- the exam code, `GUT-1`
- the question number
- the email address on your order

Write to **support@mometrix.net**. We reply within one business day.

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QUESTION 1 SINGLE CHOICE

Which characteristic of natural gas makes it rise and disperse rapidly when released outdoors?

A It is heavier than air

B It is lighter than air

C It is the same density as air

D It is a liquid at atmospheric pressure

ANSWER B

WHY Natural gas (methane) has a specific gravity of approximately 0.60, making it lighter than air, so it rises and disperses rapidly in open, well-ventilated areas. This behaviour affects how leaks should be tested and ventilated.

QUESTION 2 SINGLE CHOICE

Compared to natural gas, propane has which of the following characteristics?

A Lighter specific gravity and lower heating value

B Heavier specific gravity and higher heating value

C Same specific gravity and same heating value

D Lighter specific gravity and the same heating value

ANSWER B

WHY Propane (C_3H_8) has a specific gravity of about 1.52 (heavier than air) and a higher energy content per unit volume (approximately 2,520 BTU/ft^3) than natural gas (approximately 1,030 BTU/ft^3). This affects leak behaviour and appliance sizing.

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QUESTION 3 SINGLE CHOICE

The chemical reaction that occurs when a fuel gas combines with oxygen and releases heat, light, and combustion products is called:

A Oxidation

B Combustion

C Evaporation

D Sublimation

ANSWER B

WHY Combustion is the rapid oxidation of a fuel gas with oxygen, releasing heat, light, and producing combustion products such as CO_2 and water vapour. Proper air/fuel mixture is required for complete combustion.

QUESTION 4 SINGLE CHOICE

Before testing any gas piping system for leaks, the technician must first:

A Light the pilot to confirm appliance operation

B Purge the system of air or gas as required and verify the system is safe to test

C Open all appliance shut-off valves to release pressure

D Disconnect the gas meter to isolate the system

ANSWER B

WHY Safe leak testing requires that the system be properly purged (or evacuated, depending on the test medium) and that conditions such as closed valves, capped ends, and suitable test pressure be verified before pressurizing. Pressurizing with gas without purging creates an explosive atmosphere.

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QUESTION 5 SINGLE CHOICE

A customer reports a strong smell of natural gas inside a building. The first action the technician should take is to:

A Light a match to confirm the presence of gas

B Enter the building and open windows, then relight appliances

C **Evacuate the area, eliminate ignition sources, and notify the gas utility/emergency services**

D Turn off the customer's water heater and leave

ANSWER C

WHY The standard emergency response to a gas odour indoors is to evacuate occupants, avoid creating ignition sources (no flames, switches, or vehicles running), and notify the gas utility and emergency services. Investigating with ignition sources or operating appliances could cause ignition.

QUESTION 6 SINGLE CHOICE

When working in a confined space that may contain a hazardous atmosphere, the minimum acceptable practice for entry is to:

A Enter quickly to minimise exposure time

B **Test the atmosphere before entry and continuously monitor it while occupied, with a trained attendant and rescue plan in place**

C Rely on the smell of gas to determine if entry is safe

D Use a fan for ventilation and proceed without atmospheric monitoring

ANSWER B

WHY Confined space entry requires atmospheric testing (oxygen, LEL, toxic gases) before entry, continuous monitoring while occupied, a designated attendant, a rescue plan, and required PPE. Smell is not a reliable indicator of toxic or oxygen-deficient atmospheres.

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QUESTION 7 SINGLE CHOICE

For a low-pressure residential natural gas distribution system (operating pressure not exceeding 7" w.c.), the standard leakage test is typically performed at:

A 5 psi for 15 minutes

B 10 psi for 30 minutes

C The operating pressure of the system for a defined period, with no measurable pressure drop

D Three times the operating pressure for 1 hour

ANSWER C

WHY Low-pressure systems are leak-tested at their operating pressure (commonly up to 7" w.c. for natural gas) for a specified duration (often 10 minutes or longer depending on the standard). The test passes if there is no measurable pressure drop on a gauge of appropriate resolution. High-pressure systems are tested at much higher pressures.

QUESTION 8 SINGLE CHOICE

Which instrument is used to detect the presence of a combustible gas at very low concentrations (ppm) in the air?

A Manometer

B Combustible gas indicator (CGI)

C Pressure gauge

D Anemometer

ANSWER B

WHY A combustible gas indicator (CGI) is calibrated to detect combustible gases at low ppm levels (typically 0–100% LEL) and is the standard instrument for leak surveys and indoor air testing. Manometers measure low pressure; pressure gauges measure higher pressure; anemometers measure air velocity.

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QUESTION 9 MULTIPLE CHOICE

Which of the following are properties of natural gas? (Choose two.)

A **It is odourless in its natural state**

B **It is lighter than air**

C It has a specific gravity greater than 1.0

D It is a liquid at atmospheric pressure and standard temperature

ANSWER **A** · **B**

WHY Natural gas (methane) is naturally odourless; an odorant (mercaptan) is added so leaks can be detected by smell. It is lighter than air, with a specific gravity of about 0.6. Propane, not natural gas, is heavier than air and is stored as a liquid under pressure.

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