

Brett Robbins Academic Consulting

Chemistry 20 Practice Test

Unit B: Forms of Matter · Gases

10 Questions

Original practice questions written to the Alberta curriculum, in the style of past diploma examinations. Work through each question, then check your answers with the key at the end.

This practice test was made by AI and there may be mistakes. If a question or answer looks wrong, contact Brett for clarification.

Question 1

A temperature of 25°C is equivalent to

- A) 248 K
- B) 273 K
- C) 298 K
- D) 323 K

Question 2

A gas pressure of 303.9 kPa is equivalent to

Use $1.00\text{ atm} = 101.325\text{ kPa}$.

- A) 0.333 atm
- B) 3.00 atm
- C) 30.0 atm
- D) 0.0300 atm

Question 3

A sample of gas in a cylinder with a movable piston is compressed from 4.0 L to 2.0 L at constant temperature.

- A) The pressure doubles
- B) The pressure is halved
- C) The pressure does not change
- D) The pressure increases by a factor of four

Question 4

Which statement is consistent with the kinetic molecular theory of gases?

- A) Gas particles occupy most of the volume of their container
- B) Gas particles attract each other with strong forces
- C) Gas particles are in constant random motion and collide elastically
- D) Gas particles stop moving at 0°C

Question 5

A gas sample is cooled to a temperature of -23°C .

Its temperature, in kelvin, is ____

Question 6

A sample of gas occupies 2.4 L at a pressure of 120 kPa.

At constant temperature, the gas is compressed to a volume of 0.80 L.

The new pressure of the gas, in kilopascals, is ____

Question 7

A balloon has a volume of 3.0 L at 27°C .

At constant pressure, the balloon is heated to 127°C .

The new volume of the balloon is

- | | |
|----------|----------|
| A) 2.3 L | B) 4.0 L |
| C) 14 L | D) 1.3 L |

Question 8

An automobile tire has a gas pressure of 210 kPa at 20° C.

After driving, the temperature of the air in the tire rises to 50° C

while the volume stays constant. The new pressure in the tire is

A) 232 kPa

B) 191 kPa

C) 525 kPa

D) 210 kPa

Question 9

At STP, the molar volume of any gas is 22.4 L/mol.

The volume occupied by 0.50 mol of a gas at STP, in litres, is ____

Question 10

A mixture of three gases in a container has a total pressure of 150 kPa.

The partial pressure of nitrogen is 90 kPa and the partial pressure

of oxygen is 40 kPa. The partial pressure of the third gas is

A) 60 kPa

B) 100 kPa

C) 130 kPa

D) 20 kPa

Answer Key

- | | | |
|------|--------|---------|
| 1. C | 5. 250 | 9. 11.2 |
| 2. B | 6. 360 | 10. D |
| 3. A | 7. B | |
| 4. C | 8. A | |

This practice test was made by AI and there may be mistakes. If a question or answer looks wrong, contact Brett for clarification.