**FIVE AS-LEVEL QUESTIONS**

**1.** Which one of the following contains the smallest number of moles of carbon dioxide gas?

**A**       2.65 g

**B**       0.0150 m3 at 1000 K and 33.0 kPa

**C**       1.50 dm3 at 327 °C and 200 kPa

**D**       1500 cm3 at 300 K and 100 kPa

**(Total 1 mark)**

**2.** Which one of the following samples of gas, when sealed into a vessel of volume 0.10 m3, is at the highest pressure?

**A**       1.6 g of helium (He) at 100 K

**B**       1.6 g of methane (CH4) at 100 K

**C**       1.6 g of oxygen (O2) at 600 K

**D**       1.6 g of sulphur dioxide (SO2) at 1200 K

**(Total 1 mark)**

|  |  |
| --- | --- |
|  |  |

**3.** Which one of the following samples of gas occupies the largest volume?

**A**       1.0 g of ozone (O3) at l00 kPa and 300 K

**B**       1.0 g of oxygen (O2) at 100 kPa and 300 K

**C**       1.0 g of water vapour (H2O) at 250 kPa and 450 K

**D**       1.0 g of methane (CH4) at 333 kPa and 500 K

**(Total 1 mark)**

**4.** Which one of the following contains the greatest number of moles of methanol?

(The Avogadro number (*L*) is 6.02 × 1023, the relative molecular mass (*M*r) of methanol is 32.)

**A**       6.6 × 1022 molecules of methanol

**B**       3.3 g of methanol

**C**       2.5 × 10−3 m3 of methanol vapour at 300 K and 100 kPa

**D**       70 cm3 of 1.5 M aqueous methanol

**(Total 1 mark)**

**5.** What is the volume occupied by 10.8 g of the freon CCl2F2 at 100 kPa and 273 K?

**A**       2.02 dm3

**B**       2.05 dm3

**C**       2.02 cm3

**D**       2.05 cm3

**(Total 1 mark)**

Answers: B, A, D, A, A