1 A man is running a race in a straight line.

What is an approximate value of his kinetic energy?

A 10 J **B** 100 J **C** 1000 J **D** 10 000 J

2 A sample of gas has a mass of 4.8 μg and occupies a volume of 1.2 dm^3.

What is the density of the sample of gas?

A $4.0 \times 10^{-3}\,kg\,m^{-3}$

B $4.0 \times 10^{-5}\,kg\,m^{-3}$

C $4.0 \times 10^{-6}\,kg\,m^{-3}$

D $4.0 \times 10^{-8}\,kg\,m^{-3}$

3 Which characteristics are possessed by a vector quantity but **not** by a scalar quantity?

A direction only

B magnitude and direction

C magnitude and unit

D unit only

4 A circuit is set up in order to determine the resistance of a 12 V, 1.2 W lamp when operating normally. An analogue ammeter and an analogue voltmeter are used.

Which ranges for the meters would be most suitable?

	ammeter range / A	voltmeter range / V
A	0–0.5	0–20
B	0–0.5	0–100
C	0–10	0–20
D	0–10	0–100

5 Two liquid-in-glass thermometers in a well-mixed liquid are individually observed by 10 different students. All agree that one thermometer reads 21 °C and the other thermometer reads 23 °C.

What is a possible explanation for the difference?

A The liquid is not all at the same temperature.

B The readings are not precise.

C There is a random error affecting the readings.

D There is a systematic error affecting the readings.