

- 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 $4.8 \mu\text{g}$ and occupies a volume of 1.2 dm^3 .

What is the density of the sample of gas?

- A $4.0 \times 10^{-3} \text{ kg m}^{-3}$
B $4.0 \times 10^{-5} \text{ kg m}^{-3}$
C $4.0 \times 10^{-6} \text{ kg m}^{-3}$
D $4.0 \times 10^{-8} \text{ kg m}^{-3}$

- 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.