A Level · OCR · Physics

14 mins 14 questions

Multiple Choice Questions

Physical Quantities & Units

Physical Quantities / SI Units / Homogeneity of Physical Equations & Powers of Ten / Labelling Graphs & Tables

Easy (6 questions)	/6
Medium (7 questions)	/7
Hard (1 question)	/1
Total Marks	**/14**

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Easy Questions

1 Which one of the following prefixes represents the **smallest** multiplication factor?

A. femto (f)

B. micro (μ)

C. nano (n)

D. pico (p)

(1 mark)

2 An athlete is running at a speed of about 5 ms^{-1}.

What is a reasonable estimate for the kinetic energy of this athlete?

A. 12 J

B. 100 J

C. 900 J

D. 800 000 J

(1 mark)

3 Which set of prefixes **A, B, C** or **D** are in order of **increasing** magnitude?

A. micro, milli, centi, kilo

B. milli, centi, micro, kilo

C. kilo, centi, milli, micro

D. centi, micro, milli, kilo

(1 mark)

4 Which of the following shows the correct base units for pressure?

A. kgm^{-2}

B. $kgm^{-2}\ s^{-2}$

C. $kgm^{-1}\ s^{-2}$

D. $kgm^{2}\ s^{-3}$

(1 mark)

5 Which of the following units is **not** an S.I. base unit?

A. ampere

B. mole

C. volt

D. kilogram

(1 mark)

6 Which of the following is a correct unit for gravitational field strength?

A. $J\ kg^{-1}$

B. $N\ kg^{-1}$

C. $N\ m^{2}\ kg^{-2}$

D. $kg\ m\ s^{-1}$

(1 mark)

Medium Questions

1 Which electrical quantity has S.I. units ampere-second (A s)?

A. charge

B. current

C. resistance

D. potential difference

(1 mark)

2 Which pair of quantities have the same S.I. base units?

A. force, strain

B. force, stress

C. pressure, stress

D. strain, upthrust

(1 mark)

3 Which of the following options is the SI unit of charge?

A. Coulomb, C

B. Ampere, A

C. Ohm, Ω

D. Electronic charge, e

(1 mark)

4 Which of the following units is **not** a derived SI unit?

A. J

B. Hz

C. A

D. Pa

(1 mark)

5 What is the number of cm^3 in 100 litres?

A. 10^5

B. 0.1

C. 10^3

D. 10^2

(1 mark)

6 The gravitational field strength on the surface of Mars is 38% of that on the surface of the Earth. By estimating the average mass of a human being, which of the following is most likely to be equal to the average weight of a human on the surface of Mars?

A. 26 N

B. 260 N

C. 687 N

D. 2687 N

(1 mark)

7 Which of the following is equivalent to 80 GeV?

A. 8×10^{10} V

B. $40 \times$ MJ

C. 12.8 nJ

D. 1.28 μJ

(1 mark)

Hard Questions

1 The following equation relates the force of air resistance acting on an object *F* to the speed of the object in air *v*.

$$F = -bv^2$$

What are the SI base units of *b* that make the equation homogeneous?

A. m s^{-1}

B. s m^{-1}

C. kg m s^{-1}

D. kg m^{-1}

(1 mark)