

Mark scheme for grade 7 physics

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

11.

Physical Quantity	SI Unit	Symbol for SI unit
length	metre	m
Area	Metre-squared	m²
Mass	kilogram	kg
Temperature	Kelvin	K
Volume	metre-cubed	m³
time	second	s

12.

Fundamental Quantities	Fundamental Units	Symbol for Fundamental Units
Luminous intensity	candela	cd
Electric current	Ampere	A
Amount of substance	mole	mol
Time	Second	s
Temperature	Kelvin	K
Length	metre	m
mass	Kilogram	kg

13.

- (a) The length of a room is 3.5 m.
- (b) 80 kg is the average mass of a person.
- (c) The temperature of a classroom is about 23 °C.
- (d) 225 cm² is the area of a tile.
- (e) The time taken by a sports car to travel the distance during a race was 3600 s.
- (f) The volume of the cube as calculated was 84 m³.

14.

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- (a) Luminous intensity → candela
 - (b) Area → metre-squared
 - (c) Temperature → Kelvin
 - (d) Volume → metre-cubed
 - (e) Mass → kilogram
 - (f) Amount of substance → mole
 - (g) Time → second
 - (h) Length → metre
 - (i) Electric current → Ampere

15.

- (a) Should be cm
- (b) Should be temperature
- (c) Should be kg
- (d) Should be Area
- (e) Should be volume
- (f) Should be length

16.

- (a) Length
- (b) Time
- (c) Temperature
- (d) Mass
- (e) Volume
- (f) Area

17.

(a) $6320 \text{ g} = 6.32 \times 10^3 \text{ g} = 6.32 \text{ kg}$

(b) $46000 \text{ g} = 46 \times 10^3 \text{ g} = 46 \text{ kg}$

(c) $0.8 \text{ m} = 8 \times 10^{-1} \text{ m} = 8 \text{ dm}$

(d) $0.05 \text{ m} = 5 \times 10^{-2} \text{ m} = 5 \text{ cm}$

(e) $0.02 \text{ s} = 2 \times 10^{-2} \text{ s} = 2 \text{ cm}$

(f) $0.01 \text{ g} = 1 \times 10^{-2} \text{ g} = 1 \text{ cg}$

(g) $0.007 \text{ s} = 7 \times 10^{-3} \text{ s} = 7 \text{ ms}$

(h) $0.005 \text{ g} = 5 \times 10^{-3} \text{ g} = 5 \text{ mg}$

(i) $0.004 \text{ m} = 4 \times 10^{-3} \text{ m} = 4 \text{ mm}$

Measurement of length

- 1.** Defined as the distance between two points
- 2.** Metre/m
- 3.** Ruler, half-metre-rule, metre rule, measuring tape
- 4.**
 - (i)** 0-30 cm
 - (ii)** 0-50 cm
 - (iii)** 0-100cm
 - (iv)** 0-several metres
- 5.**
 - (a)** a ruler
 - (b)** measuring cylinder
 - (c)** metre rule
 - (d)** measuring cylinder
- 6.** length of object = $6.5 - 2.5 = 4.0 \text{ cm}$
- 7.** length of feather = $29 - 10 = 19 \text{ mm}$
- 8.** length of nail = $3.7 - 1.0 = 2.6 \text{ cm}$
- 9.**
 - (a)** diameter of 1 steel ball = $(17-6)/3 = 3.66 \text{ cm}$
 - (b)** to prevent balls from falling/rolling down
- 10.** Length of nail = $8.1 - 5.2 = 2.9 \text{ cm}$
- 11.** Diameter of beaker = $8.0 - 3.5 = 4.5 \text{ cm}$
- 12.** Diameter of 1 ball bearing = $(16-4)/5 = 2.4 \text{ cm}$
- 13.** Diameter of ball = $14 - 8 = 6 \text{ cm}$
- 14.** Difference in heights = $4.5 - 1.7 = 2.8 \text{ cm}$
- 15.** Length of 1 tile = $9 - 3$ or $15 - 9 = 6 \text{ cm}$
- 16.** Diameter of 1 sphere = $(12-4)/4 = 2 \text{ cm}$