

## Chapter 1: MEASUREMENT

Choose the correct answer:

1. We can write the speed of light ( $c = 299,000,000 \text{ m/s}$ ) using the **scientific notation as:**

- (a)  $2.99 \times 10^8$       (b)  $29.9 \times 10^8$       (c)  $0.299 \times 10^8$       (d)  $299 \times 10^8$
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2. A car moving with a speed of **100 km/h**, what is its speed in **m/s**?

- (a) 27.8 m/s      (b) 16.7 m/s      (c) 277.8 m/s      (d) 167.7 m/s
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3. We can express the very small number ( **0.000 000 004 56** ) using the scientific notation as:

- (a)  $4.56 \times 10^{-8}$       (b)  $4.56 \times 10^{-9}$       (c)  $4.56 \times 10^{-10}$       (d)  $4.56 \times 10^{-11}$
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4. The conversion factor to convert **3 min to seconds** is

- (a)  $\frac{3600s}{3 \text{ min}}$       (b)  $\frac{60s}{3 \text{ min}}$       (c)  $\frac{3600s}{1 \text{ min}}$       (d)  $\frac{60s}{1 \text{ min}}$
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5. Which of the following is **not a base quantity** ?

- (a) speed      (b) mass      (c) length      (d) time
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6. How many **centimeters in 1 km**?

- (a)  $10^5 \text{ cm}$       (b)  $10^2 \text{ cm}$       (c) 10 cm      (d)  $10^4 \text{ cm}$
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7. The **conversion factor** to convert **hours to seconds** is:

- (a)  $\frac{1 s}{3600 h}$       (b)  $\frac{3600 h}{1 s}$       (c)  $\frac{1 h}{3600 s}$       (d)  $\frac{3600 s}{1 h}$
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8. (**1 m = 3.281 ft**) then **1.5 ft/h** equals:

- (a)  $1.37 \times 10^{-3} \text{ m/s}$       (b)  $1.27 \times 10^{-4} \text{ m/s}$       (c) 1645.8 m/s      (d) 17717.4 m/s
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9. A **square** with an **edge of 1 cm** has an area of: ( area = edge<sup>2</sup> )

- (a)  $10^2 \text{ m}^2$       (b)  $10^4 \text{ m}^2$       (c)  $10^{-4} \text{ m}^2$       (d)  $10^{-6} \text{ m}^2$
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10.  **$10^3$  gigawatts** is:

- (a)  $10^{12} \text{ watts}$       (b)  $10^9 \text{ watts}$       (c)  $10^{-6} \text{ watts}$       (d)  $10^{-3} \text{ watts}$
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11. The **conversion factor** to convert **10 kg to g** is:

- (a)  $\frac{10^3 g}{1kg}$       (b)  $\frac{10^3 g}{10kg}$       (c)  $\frac{1kg}{10^3 g}$       (d)  $\frac{10kg}{10^3 g}$
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12. Which prefix is **true**?

- (a) milli =  $10^3$       (b) micro =  $10^{-9}$       (c) mega =  $10^6$       (d) pico =  $10^9$
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13.  $1 \text{ mm}^2 =$

- (a)  $10^{-3} \text{ m}^2$       (b)  $10^{-6} \text{ m}^2$       (c)  $10^{-9} \text{ m}^2$       (d)  $10^{-12} \text{ m}^2$
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14. If the **length, height, and width** of a **rectangular block** are **3 cm, 4 cm, and 5 cm** respectively, then the **volume** is

- (a)  $60 \text{ m}^3$       (b)  $60 \text{ cm}^3$       (c)  $60 \text{ m}$       (d)  $60 \text{ cm}$
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15. If **1 mi = 1609 m** then **55 mi/h** is

- (a)  $15.4 \text{ m/s}$       (b)  $24.6 \text{ m/s}$       (c)  $66.3 \text{ m/s}$       (d)  $88.1 \text{ m/s}$
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16. A **nanosecond** is:

- (a)  $10^9 \text{ s}$       (b)  $10^{-9} \text{ s}$       (c)  $10^{10} \text{ s}$       (d)  $10^{-10} \text{ s}$
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17. A **gram** is:

- (a)  $10^{-6} \text{ kg}$       (b)  $10^{-3} \text{ kg}$       (c)  $10^6 \text{ kg}$       (d)  $10^3 \text{ kg}$
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18. The **SI base unit** for **mass** is:

- (a) gram      (b) pound      (c) kilogram      (d) kilopound
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19. There are **1000 meters** in

- (a) 1 kilometer      (b) 10 kilometer      (c) 100 cm      (d) 10,000 cm
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20. How many **centimeters in 1 km**?

- (a)  $10^5 \text{ cm}$       (b)  $10^2 \text{ cm}$       (c)  $10 \text{ cm}$       (d)  $10^4 \text{ cm}$
- 

21. The **conversion factor** to convert **hours to seconds** is:

- (a)  $\frac{1 \text{ s}}{3600 \text{ h}}$       (b)  $\frac{3600 \text{ h}}{1 \text{ s}}$       (c)  $\frac{1 \text{ h}}{3600 \text{ s}}$       (d)  $\frac{3600 \text{ s}}{1 \text{ h}}$
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22. If **1m = 3.281 ft**, then **3.375 ft<sup>3</sup> =**

- (a)  $1.2 \times 10^2 \text{ m}^3$       (b)  $9.6 \times 10^{-2} \text{ m}^3$       (c)  $10.5 \text{ m}^3$       (d)  $0.21 \text{ m}^3$
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23.  $10^{-9}$  second is

- (a) millisecond      (b) microsecond      (c) nanosecond      (d) gigasecond
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**24. A 10 kilogram =**

- (a)  $10^6$  g      (b)  $10^3$  g      (c)  $10^4$  g      (d)  $10^2$  g
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**25. The SI units** of the base quantities (Length, Mass, Time) are:

- (a) m, kg, s      (b) cm, g, s      (c) km, g, s      (d) km, kg, s
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**26. (0.000 000 00636)** is equal to:

- (a)  $6.36 \times 10^{-7}$       (b)  $6.36 \times 10^{-8}$       (c)  $6.36 \times 10^{-9}$       (d)  $6.36 \times 10^{-10}$
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**27. 50 km =**

- (a)  $5 \times 10^5$  cm      (b)  $5 \times 10^6$  cm      (c)  $5 \times 10^7$  cm      (d)  $5 \times 10^8$  cm
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**28.  $100 \text{ g/cm}^3 =$**

- (a)  $10^3 \text{ kg/m}^3$       (b)  $10^4 \text{ kg/m}^3$       (c)  $10^5 \text{ kg/m}^3$       (d)  $10^6 \text{ kg/m}^3$
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**29. a microsecond is:**

- (a)  $10^6$  s      (b)  $10^{-6}$  s      (c)  $10^9$  s      (d)  $10^{-9}$  s
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**30. The conversion factor** to convert **6 m to mm** is:

- (a)  $\frac{10^3 \text{ mm}}{1 \text{ m}}$       (b)  $\frac{10^3 \text{ mm}}{6 \text{ m}}$       (c)  $\frac{1 \text{ m}}{10^3 \text{ mm}}$       (d)  $\frac{6 \text{ m}}{10^3 \text{ mm}}$
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**Are the following statements (True ✓) or (False ✗) ?**

**31.** The SI base unit for mass is gram.

- (a) True      (b) False
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**32.** There are 1209600 seconds in one week.

- (a) True      (b) False
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