1. What is a physical quantity?

- A) A property that cannot be measured
- B) A characteristic of an object that can be measured
- C) A unit used for measurement
- D) A tool for measuring objects
- **Answer**: B
- **Explanation**: A physical quantity is a measurable characteristic, such as length, mass, or time, expressed with a numerical value and a unit, as explained in the chapter.

---

2. Which of the following is a fundamental quantity?

- A) Area
- B) Volume
- C) Length
- D) Density
- **Answer**: C
- **Explanation**: Length is one of the seven fundamental quantities listed in the chapter, while area, volume, and density are derived quantities.

---

3. What is the SI unit of mass?

- A) Gram
- B) Kilogram
- C) Tonne
- D) Quintal
- **Answer**: B
- **Explanation**: The SI unit of mass is the kilogram (kg), as specified in the chapter.

---

4. How many millimetres are in 1 metre?

- A) 10
- B) 100
- C) 1000
- D) 10,000

- **Answer**: C
- **Explanation**: The chapter states that 1 metre = 1000 millimetres.

---

5. Which physical quantity is measured when a tailor takes body measurements?

- A) Mass
- B) Length
- C) Time
- D) Temperature
- **Answer**: B
- **Explanation**: A tailor measures length to determine the size of clothes, as mentioned in the chapter's table of situations.

---

6. What is the SI unit of time?

- A) Minute
- B) Hour
- C) Second
- D) Day
- **Answer**: C
- **Explanation**: The SI unit of time is the second (s), as per the chapter.

---

7. Which of the following is a derived quantity?

- A) Mass
- B) Time
- C) Volume
- D) Temperature
- **Answer**: C
- **Explanation**: Volume is a derived quantity calculated as Length × Breadth × Height, while mass, time, and temperature are fundamental quantities.

---

8. What is the formula for density?

- A) Mass × Volume

- B) Mass ÷ Volume
- C) Volume ÷ Mass
- D) Mass + Volume
- **Answer**: B
- **Explanation**: The chapter defines density as Mass ÷ Volume, with the unit kg/m³.

---

9. What is the SI unit of volume?

- A) Litre
- B) Millilitre
- C) Cubic metre
- D) Cubic centimetre
- **Answer**: C
- **Explanation**: The SI unit of volume is the cubic metre (m³), as stated in the chapter.

---

10. How many centimetres are in 1 metre?

- A) 10

- B) 100

- C) 1000

- D) 10,000

- **Answer**: B

- **Explanation**: The chapter explains that 1 metre = 100 centimetres.

---

11. What is the least count of a commonly used metre scale?

- A) 0.01 cm

- B) 0.1 cm

- C) 1 cm

- D) 10 cm

- **Answer**: B

- **Explanation**: The chapter states that the least count of a commonly used metre scale is 0.1 cm (1 mm).

---

12. Which unit is used to measure the thickness of a plastic bag in the chapter's example?

- A) Metre

- B) Centimetre

- C) Millimetre

- D) Micrometre

- **Answer**: D

- **Explanation**: The chapter mentions a notice prohibiting plastic bags below 30 micrometres (µm).

---

13. What is the relationship between a litre and cubic centimetres?

- A) 1 litre = 100 cm^3

- B) 1 litre = 1000 cm^3

- C) 1 litre = 10,000 cm^3

- D) 1 litre = 1 cm^3

- **Answer**: B

- **Explanation**: The chapter states that 1 litre = 1000 cm^3.

---

14. Why are traditional units like cubit less accurate?

- A) They are internationally accepted

- B) They vary between individuals

- C) They are SI units

- D) They are too precise

- **Answer**: B

- **Explanation**: Traditional units like cubit vary between individuals, leading to inconsistent measurements, as explained in the chapter.

---

15. What is the SI unit of temperature?

- A) Celsius

- B) Fahrenheit

- C) Kelvin

- D) Degree

- **Answer**: C

- **Explanation**: The SI unit of temperature is Kelvin (K), as listed among the fundamental units.

---

16. How many kilograms are in 1 tonne?

- A) 100

- B) 1000

- C) 10,000

- D) 1,000,000

- **Answer**: B

- **Explanation**: The chapter states that 1 tonne = 1000 kilograms.

---

17. Which instrument is used to measure time intervals in a race?

- A) Metre scale

- B) Measuring jar

- C) Stopwatch

- D) Thermometer

- **Answer**: C

- **Explanation**: The chapter mentions using a stopwatch to measure time in a race.

---

18. What is the unit of density in the SI system?

- A) kg/m^2

- B) kg/m^3

- C) m^3/kg

- D) $kg \cdot m$

- **Answer**: B

- **Explanation**: Density is calculated as Mass ÷ Volume, with the SI unit kg/m^3.

---

19. Which of the following is an incorrect way to write a unit?

- A) 1.5 kg

- B) 1.5 kgs

- C) 1000 kg/m³

- D) 60 cm

- **Answer**: B

- **Explanation**: Unit symbols do not take plurals, so 1.5 kgs is incorrect, as per the chapter's rules.

---

20. What is the least count of a measuring jar typically used in the classroom?

- A) 0.1 mL

- B) 1 mL

- C) 10 mL

- D) 100 mL

- **Answer**: B

- **Explanation**: The chapter implies that measuring jars used in experiments have a least count of 1 mL for accurate volume measurement.

Application-Level Questions

21. A stone displaces 50 mL of water in a measuring jar. What is its volume in SI units?

- A) 0.05 m³

- B) 0.00005 m³

- C) 0.005 m³

- D) 0.5 m³

- **Answer**: B

- **Explanation**: 50 mL = 50 cm³ = 50 ÷ 1,000,000 m³ = 0.00005 m³, as 1 m³ = 1,000,000 cm³.

---

22. A box has a mass of 2000 kg and a volume of 2 m³. What is its density?

- A) 1000 kg/m³

- B) 2000 kg/m³

- C) 500 kg/m³

- D) 4000 kg/m³

- **Answer**: A

- **Explanation**: Density = Mass ÷ Volume = 2000 kg ÷ 2 m^3 = 1000 kg/m^3.

---

23. Convert 3600 seconds into hours.

- A) 1 hour
- B) 2 hours
- C) 0.5 hours
- D) 3 hours
- **Answer**: A
- **Explanation**: 3600 seconds = 3600 ÷ 3600 hours = 1 hour, as 1 hour = 3600 seconds.

---

24. A pen is measured to be 15 cm long. What is its length in metres?

- A) 0.15 m
- B) 1.5 m
- C) 0.015 m
- D) 150 m
- **Answer**: A
- **Explanation**: 15 cm = 15 ÷ 100 m = 0.15 m, as 1 m = 100 cm.

---

25. A stack of 100 papers has a thickness of 10 mm. What is the thickness of one paper?

- A) 0.01 mm
- B) 0.1 mm
- C) 1 mm
- D) 10 mm
- **Answer**: B
- **Explanation**: Thickness of one paper = Total thickness ÷ Number of papers = 10 mm ÷ 100 = 0.1 mm.

---

26. A vehicle travels at 54 km/h. What is its speed in m/s?

- A) 15 m/s
- B) 20 m/s

- C) 10 m/s

- D) 25 m/s

- **Answer**: A

- **Explanation**: 54 km/h = (54 × 1000 m) ÷ 3600 s = 54,000 ÷ 3600 = 15 m/s.

---

27. A plastic bag has a thickness of 40 micrometres. What is this in metres?

- A) 0.00004 m

- B) 0.0004 m

- C) 0.004 m

- D) 0.04 m

- **Answer**: A

- **Explanation**: 40 micrometres = 40 ÷ 1,000,000 m = 0.00004 m.

---

28. If a substance has a density of 500 kg/m³ and a mass of 1000 kg, what is its volume?

- A) 0.5 m³

- B) 1 m³

- C) 2 m³

- D) 4 m³

- **Answer**: C

- **Explanation**: Volume = Mass ÷ Density = 1000 kg ÷ 500 kg/m³ = 2 m³.

---

29. Which of the following is the correct notation for the density of water?

- A) 1000 kg/m3

- B) 1000 kg/m³

- C) 1000 kgs/m³

- D) 1000 kg/cubic metre

- **Answer**: B

- **Explanation**: The correct notation uses kg/m³, not kgs or mixed names and symbols, as per the chapter's rules.

---

30. A stopwatch measures 20 seconds for 10 oscillations of a pendulum. What is the time for one oscillation?

- A) 1 s

- B) 2 s

- C) 0.5 s

- D) 4 s

- **Answer**: B

- **Explanation**: Time for one oscillation = Total time ÷ Number of oscillations = 20 s ÷ 10 = 2 s.