



5. Which of the following is NOT true about matter?
- Matter is anything which occupies space and has mass.
  - Matter contains tiny particles called atoms.
  - In the solid state, the molecules move at random in different directions.
  - Matter can be classified into a solid, liquid or a gaseous state.
6. Ice at 0°C is taken from a refrigerator and left in a room. The ice melts and eventually the water reaches room temperature. When ice at 0°C turns into water at 0°C, the process is known as;
- Boiling
  - Condensation
  - Evaporation
  - Melting
7. A tank of 2 m tall and base area of 2.5 m<sup>2</sup> is filled to the brim with a liquid of mass 40000kg. Calculate the density of the liquid.
- $\frac{4000}{25 \times 2 \times 10} \text{kgm}^{-3}$
  - $\frac{40000}{2.5 \times 2} \text{kgm}^{-3}$
  - $\frac{40000}{25 \times 2 \times 10} \text{kgm}^{-3}$
  - $\frac{40000}{25 \times 2} \text{kgm}^{-3}$
8. Which of the following statements is correct about a liquid?
- The molecules are closely packed.
  - The molecules are loosely packed.
  - The molecules move at random directions.
  - The inter-molecular distance is the same as in gases.
9. Which statement is correct?
- The force of attraction between the molecules of;
- a solid is the least
  - a liquid is the most
  - a gas is almost negligible
  - a solid is less than that of a gas.
10. State the instrument that is most suitable for measuring the diameter of a thin wire?
- Micrometre screw gauge.
  - Tape measure.
  - Vernier calliper
  - Metre rule.
11. How can you define matter?
- Physical objects on earth.
  - Anything that occupies space and has weight.
  - Matter refers to liquids such as water which flow.

- D. Matter refers to solids that are heavy.
12. Which of the following is not a derived quantity?  
 A. Density    B. Volume    C. Speed    D. Length
13. Which of the following below is a matter?  
 A. Heat    B. Sound    C. Air    D. Light
14. Which of the following statements about states of matter is/are true?  
 (i) a liquid has a definite volume but no a definite shape.  
 (ii) a gas has no definite volume and no definite shape.  
 (iii) a solid has a definite volume and shape.  
 (iv) a gas has a definite volume and shape.  
 A. (i) and (iii) only    B. (i) only    C. (i), (ii) and (iii) only    D. (iii) only
15. The particles in a solid at room temperature are  
 A. Close together and vibrating.    B. Close together and stationary.  
 C. Far apart and moving at random.    D. Close together and moving at random.
16. Which of the following statements below is *wrong*?  
 A. Matter is made up of atoms.  
 B. Solid, liquid and gas are states of matter.  
 C. Solids and liquids have definite shape and volume.  
 D. Gas molecules move freely.
17. Which one of the following fluids is the best conductor of heat?  
 A. Air    B. Alcohol    C. Water    D. Mercury
18. A spherical ball has a radius of 3cm. Find the volume in cubic meters  
 A.  $\frac{4\pi \times 27}{3 \times 10^6}$     B.  $\frac{\pi \times 27}{4 \times 10}$     C.  $\frac{4 \times 10^6}{27 \times \pi}$     D.  $\frac{4\pi \times 10^6 \times 3}{27}$
19. The distance between the lower and the upper fixed points on the Celsius scale in unmarked mercury-in-glass thermometer is 25cm. If the mercury level is 5cm above the upper fixed point, then the temperature is  
 A. 115°C    B. 20°C    C. 80°C    D. 120°C
20. To make a liquid -in-glass thermometer sensitive to a small change of temperature, we must have;

- bulb.
- A. a bulb with a thin glass wall                      B. a strong liquid in the  
 B. a very narrow bore.                                      D. a stem with a thick  
 glass wall.
21. The boiling point of water in kelvin scale is  
 A. 100 K                      B. 173 K                      C. 373 K  
 D. 323 K
22. When a clinical thermometer is sterilized in boiling water it,  
 A. it is disinfected                                      B. it bursts  
 C. it works better                                      D. Nothing happens to it.
23. Which of the following is not a fundamental quantity?  
 A. grammes    B. kilograms    C. meters                      D.  
 seconds
24. A man's body temperature is 311K. Convert to Celsius.  
 A. 39 °C                      B. 37 °C                      C. 36 °C  
 D. 38 °C
25. Which of the following metals is a better conductor.  
 A. copper                      B. iron                      C. aluminium    D.  
 sodium.

### SECTION B

26. (a) Define the term density as used in Physics and state its SI units.  
 (2mks)
- (b) A glass stopper has a volume of 16 cm<sup>3</sup> and a mass of 40 g. Calculate  
 the density of the glass stopper in:
- (i) gcm<sup>-3</sup>  
 (2mks)
- (ii) kgm<sup>-3</sup>  
 (2mks)

27. (a) Differentiate between conduction and convection.  
(2mks)

(b) Describe an experiment which can be performed to show that water is a poor conductor of heat.  
(4mks)

28. (a) What is meant by the term 'fundamental quantity'?  
(1mk)

(b) Copy and complete the table below.  
(5mks)

<b>Basic Quantity</b>	<b>SI unit</b>	<b>Symbol</b>
Mass		Kg
	second	S
Length		
Temperature	Kelvin	

(c) The pages of a book are numbered from 1 to 200 and each leaf is 0.1 mm thick. If the cover is 0.2 mm thick, what is the thickness of the book? (3mks)

(d) The reading on a burette falls from the 21.0 cm<sup>3</sup> mark to 33.0 cm<sup>3</sup> mark after 100 drops of a liquid have been used. Determine the volume of one drop. (3mks)

29. (a) Define;  
(i) Temperature  
(1mk)

(ii) Thermometer  
(1mk)

(b) Draw a well labelled diagram of a clinical thermometer  
(3mks)

(i) Why does a clinical thermometer have a constriction?  
(1mk)

(ii) Why is the range of a clinical thermometer usually  $35^{\circ}\text{C} - 42^{\circ}\text{C}$ ?  
(1mk)

30. (a)(i) What is meant by the term thermometric property.  
(1mks)

(ii) With the aid of a labelled diagram, describe how a lower fixed point of an uncalibrated thermometer can be determined.  
(4mks)

(b) The distance between the fixed points on mercury in glass thermometer is 30cm. What is the temperature in degrees Celsius if the mercury thread is 12cm below the steam point?  
(4mks)

***END.***