

Self Assessment Paper

Section 'A'

1. Which of the following has long term effect on the health of an individual?
 (a) Common cold (b) Chickenpox
 (c) Chewing tobacco (d) Stress

OR

Making anti-viral drugs is more difficult than making anti-bacterial medicines because

- (a) viruses make use of host machinery.
 (b) viruses are on the border line of living and non-living.
 (c) viruses have very few biochemical mechanisms of their own.
 (d) viruses have a protein coat.

- AI** 2. Arun has prepared 0.01% (by mass) solution of sodium chloride in water. Which of the following correctly represents the composition of the solution?
 (a) 1.00 g of NaCl + 100 g of water (b) 0.11 g of NaCl + 100 g of water
 (c) 0.01 g of NaCl + 99.99 g of water (d) 0.10 g of NaCl + 99.90 g of water

OR

Which of the following are homogeneous in nature?

- (i) Ice (ii) Wood
 (iii) Soil (iv) Air
 (a) (i) and (iii) (b) (ii) and (iv)
 (c) (i) and (iv) (d) (iii) and (iv)

3. A change in the physical state can be brought about
 (a) Only when energy is given to the system
 (b) Only when energy is taken out from the system
 (c) When energy is either given to, or taken out from the system
 (d) Without any energy change

- AI** 4. Two chambered heart occurs in:
 (a) Crocodiles (b) Fish
 (c) Aves (d) Amphibians

OR

In which group of animals, coelom is filled with blood?

- (a) Arthropoda (b) Annelida
 (c) Nematoda (d) Echinodermata

5. Which of these options are not functions of ribosomes?
 I. It helps in manufacture of protein molecules.
 II. It helps in manufacture of enzymes.
 III. It helps in manufacture of hormones.
 IV. It helps in manufacture of starch molecules.
 (a) I and II (b) II and III
 (c) III and IV (d) IV and I
6. Suppose a boy is enjoying a ride on a merry-go-round which is moving with a constant speed of 10 ms^{-1} . It implies that the boy is
 (a) At rest (b) Moving with no acceleration
 (c) In accelerated motion (d) Moving with uniform velocity
7. Animal husbandry is the scientific management of
 (i) animal breeding (ii) culture of animals
 (iii) animal livestock (iv) rearing of animals
 (a) (i), (ii) and (iii) (b) (ii), (iii) and (iv)
 (c) (i), (ii) and (iv) (d) (i), (iii) and (iv)
8. When a body falls freely towards the earth, then its total energy
 (a) increases (b) decreases
 (c) remains constant (d) first increases and then decreases.

9. Law of gravitation gives the gravitational force between
[AI] (a) the Earth and a point mass only. (b) the Earth and Sun only.
(c) any two bodies having some mass. (d) two charged bodies only.
10. A goalkeeper in a game of football pulls his hands backwards after holding the ball shot at the goal. This enables the goal keeper to
(a) exert larger force on the ball. (b) reduce the force exerted by the ball on hands.
[AI] (c) increase the rate of change of momentum. (d) decrease the rate of change of momentum.
11. Name the state of matter in which particles just move around randomly because of very weak force of attraction.

OR

What is meant by latent heat of fusion?

12. What will be the number of neutrons if an atom has mass number = 23 and the number of electrons = 11?
13. State an example, how force can change velocity of a body.

OR

Rakesh tries to push a box on a rough floor but is unable to move it. Name the force which balances the force applied by him.

14. Two blocks, one of iron and other of wood, are immersed in the water at the same depth. Which will come upward and why?
15. What is the audible range of human ear?

OR

A baby recognizes her mother by her voice. Name the characteristic of sound involved.

DIRECTIONS (Qs. 16 to 20) : In the following questions, a statement of assertion (A) is followed by a statement of reason (R). Mark the correct choice as:

- (a) Both assertion (A) and reason (R) are true and reason (R) is the correct explanation of assertion (A).
(b) Both assertion (A) and reason (R) are true but reason (R) is not the correct explanation of assertion (A).
(c) Assertion (A) is true but reason (R) is false.
(d) Assertion (A) is false but reason (R) is true.

16. **Assertion :** Phosphorus cycle does not involve micro-organisms.

Reason : Micro-organisms are associated with Nitrogen cycle.

17. **Assertion :** The number of particles present in one mole of a substance is fixed.

Reason : The mass of one mole of a substance is equal to its relative atomic mass in grams.

18. **Assertion :** Muscle fibers are contractile in nature.

Reason : Cells of muscle tissue can shorten forcefully and again return to the relaxed state.

19. **Assertion :** Heat energy when supplied to the solid, it starts melting.

Reason : Solid particles take up the heat and helps in melting or fusion.

20. **Assertion :** A balloon filled with hydrogen gas floats in the air.

[AI] **Reason :** Upthrust acting on the balloon is greater than weight of the balloon.

Section 'B'

[AI] 21. Why are manures and fertilizers used in fields? A farmer irrigated his field excessively just after applying fertilizers. Explain why this is not a correct practice?

22. Give reasons for the following:

(i) The reverberation time of a hall used for speeches should be very short.

[AI] (ii) A vibrating body produces sound. However, no sound is heard when a simple pendulum oscillates in air.

(iii) Sounds of same loudness and pitch, but produced by different musical instruments such as violin and flute are distinguishable.

OR

When a stone is thrown into a pond what type of waves are produced? Draw its displacement-time graph. Label crest, trough and wavelength on the graph.

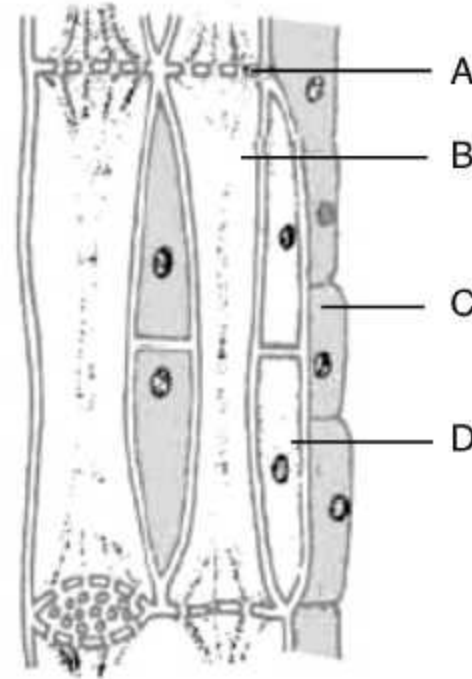
23. Write in brief, an activity to show the particulate nature of matter. List any two characteristics of particles of matter.

OR

Distinguish among three states of matter with respect to property indicated : Density, Diffusion and Particle Motion.

[AI] 24. Define the terms (a) isotope, (b) isobar giving one example of each. Name the element whose isotope is used in (i) nuclear reactor, (ii) treatment of cancer.

25. Two beakers A and B contain plain water and concentrated sugar solution respectively. Equal number of dry raisins are kept in them for a few hours and then taken out.
- Explain the reason for the difference in the physical appearance of raisins which were taken out of the two beakers.
 - On the basis of above observation, categorise the two solutions as hypotonic and hypertonic.
26. (i) Name the tissue in the following figure :



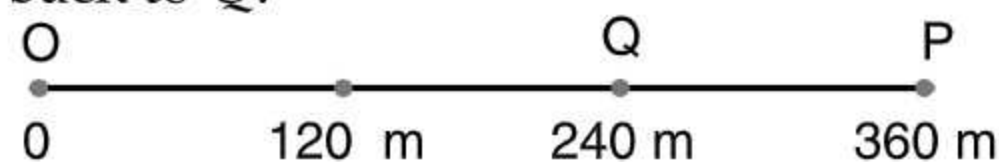
- (ii) Identify the parts 'A', 'B', 'C' and 'D'.

OR

- Name the following:
 - Tissues that connect muscles to bone.
 - Tissues that store fat in our body.
 - Tissues that transport food in plants.
 - Tissues that provide flexibility in plants.
 - List the role of cork in plants.
27. A force of 5N produces an acceleration of 8 m/s^2 in mass m_1 and an acceleration of 24 m/s^2 in mass m_2 . What acceleration would it give if both the masses are tied together ?
28. Explain an activity to show that, during a free fall heavier and lighter objects accelerate at the same rate.
29. (i) Write the SI unit of density. Why relative density has no units?
 (ii) What is meant by the statement, that the relative density of gold is 19.3?
30. A vehicle moving with a velocity of 2 m/s can be stopped over a distance of 2 m . Keeping the retarding force constant, if kinetic energy is doubled, what will be the distance covered before it comes to rest ?

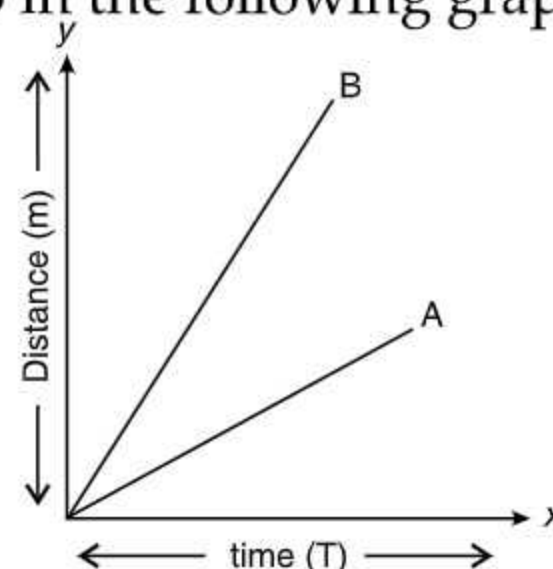
Section 'C'

- Give two ways in which nitrogen from the atmosphere is converted into a usable form.
 - Give a schematic representation of the carbon cycle, label the main processes involved in it.
32. (a) Differentiate between average velocity and average speed.
- [AI]** (b) A car is moving along a straight line OP as shown below. It moves from O to P in 18 s and returns from P to Q in 6 s. What are the average velocity and average speed of the car in going (i) from O to P (ii) from O to P and back to Q.



OR

- Derive the equation of motion, $s = ut + \frac{1}{2}at^2$ by graphical method.
- Which of the two bodies A and B in the following graph is moving with higher speed and why ?



33. (a) What kind of food is advised when we fall sick and why ?
 (b) Mention any three basic conditions required for good health.

34. (a) Write one word for each of the following statements :
- (i) All prokaryotic organisms like bacteria and bluegreen algae are put in a kingdom.
 - (ii) The cryptogams which do not have well developed vascular tissue are kept in a group.
- (b) Mention three animal phyla that possess a true coelom.

OR

A plant specimen was found with rhizoids instead of differentiated roots.

- (a) Identify the group to which it belongs.
 - (b) Write any two characteristics of this group.
 - (c) Draw the diagram of a plant belonging to this group.
35. Write your observation when the following processes take place :
- (i) An aqueous solution of sugar is heated to dryness.
 - (ii) A saturated solution of potassium chloride prepared at 60°C is allowed to cool at room temperature.
 - (iii) A mixture of iron filings and sulphur powder is heated strongly.
 - (iv) A beam of light is passed through a colloidal solution.
 - (v) HCl is added to the mixture of iron and sulphur.
- AI** 36. (i) If 18 gm of pure water is electrolysed, 2 gm of hydrogen and 16 gm of oxygen is obtained. Which law of chemical combination is illustrated by this statement ?
- (ii) State the law of constant proportion. Illustrate with the help of an example.
 - (iii) Which postulate of Dalton's atomic theory is the result of law of conservation of mass ?
 - (iv) Which point of Dalton's atomic theory came from law of constant proportions ?