

Self Assessment Paper

Section 'A'

1. Poultry fowl are susceptible to the following pathogens :
- | | |
|-------------|------------------|
| (a) Viruses | (b) Bacteria |
| (c) Fungi | (d) All of these |

OR

Which one is an oil yielding plant among the following?

- | | |
|-----------------|---------------------|
| (a) Lentil | (b) Sunflower |
| (c) Cauliflower | (d) <i>Hibiscus</i> |
2. Which of the following are chemical changes?
- | | |
|----------------------|---|
| (i) Decaying of wood | (ii) Burning of wood |
| (iii) Sawing of wood | (iv) Hammering of a nail into a piece of wood |
- | | |
|--------------------|--------------------|
| (a) (i) and (ii) | (b) (ii) and (iii) |
| (c) (iii) and (iv) | (d) (i) and (iv) |

OR

[AI] Which of the following statements are true for pure substances?

- | | |
|--|--|
| (i) Pure substances contain only one kind of particles. | |
| (ii) Pure substances may be compounds or mixtures. | |
| (iii) Pure substances have the same composition throughout. | |
| (iv) Pure substances can be exemplified by all elements other than nickel. | |
- | | |
|--------------------|--------------------|
| (a) (i) and (ii) | (b) (i) and (iii) |
| (c) (iii) and (iv) | (d) (ii) and (iii) |
3. In the Thomson's model of atom, which of the following statements are correct?
- | | |
|---|--|
| (i) The mass of the atom is assumed to be uniformly distributed over the atom. | |
| (ii) The positive charge is assumed to be uniformly distributed over the atom. | |
| (iii) The electrons are uniformly distributed in the positively charged sphere. | |
| (iv) The electrons attract each other to stabilise the atom. | |
- | | |
|-------------------------|-------------------------|
| (a) (i), (ii) and (iii) | (b) (i) and (iii) |
| (c) (i) and (iv) | (d) (i), (iii) and (iv) |

OR

Which of the following statements is always correct?

- | | |
|--|--|
| (a) An atom has equal number of electrons and protons. | |
| (b) An atom has equal number of electrons and neutrons. | |
| (c) An atom has equal number of protons and neutrons. | |
| (d) An atom has equal number of electrons, protons and neutrons. | |
4. The cell wall of which out of these is not made up of cellulose?
- | | |
|----------------|---------------------|
| (a) Bacteria | (b) <i>Hydrilla</i> |
| (c) Mango tree | (d) Cactus |

[AI] 5. Slope of a velocity-time graph gives

- | | |
|----------------------|----------------------|
| (a) The distance | (b) The displacement |
| (c) The acceleration | (d) The speed |

8. A water tanker filled upto $\frac{2}{3}$ of its height is moving with a uniform speed. On sudden application of the brake, the water in the tank would
- (a) move backward. (b) move forward.
(c) be unaffected. (d) rise upwards.
9. Which of the following correctly represents 360 g of water?
- (i) 2 moles of H_2O (ii) 20 moles of water
(iii) 0.22×10^{23} molecules of water (iv) 1.2044×10^{25} molecules of water
- (a) (i) (b) (i) and (iv)
(c) (ii) and (iii) (d) (ii) and (iv)
10. Two objects of different masses falling freely near the surface of moon would
- (a) have same velocities at any instant. (b) have different accelerations.
(c) experience forces of same magnitude. (d) undergo a change in their inertia.
11. Why does a mug full of water feel lighter inside the water?
12. What is conversion of ammonia into nitrates called ?

OR

13. Name the compounds responsible for hole in ozone layer of atmosphere.
13. Moon is experiencing a gravitational force due to Earth and is revolving around the Earth in a circular orbit. How much work is done by the moon?

OR

At what speed a body of mass 1 kg will have a kinetic energy of 1 J?

14. The boiling point and freezing point of water are $100^\circ C$ and $0^\circ C$ respectively. Convert these temperatures in K.

OR

A gas jar 'X' containing air is inverted over another jar 'Y' containing a brown gas which is heavier than air. After sometime, brown colour is also observed in the gas jar 'X'. Identify the phenomenon associated with this observation.

15. State the Law of Conservation of mass.

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 :** Husk of coconut is made of sclerenchymatous tissue.

Reason: Cells of sclerenchymatous tissue are dead with long and narrow walls thickened due to lignin.

17. **Assertion :** Influenza spreads faster.

Reason: It is an air-borne disease.

18. **Assertion :** A stone tied with a piece of thread describing a circular path with constant velocity on being released moves in a straight line.

Reason: Along the circular path direction of motion remains the same at every point.

19. **Assertion :** The particles of gas intermixes with each other.

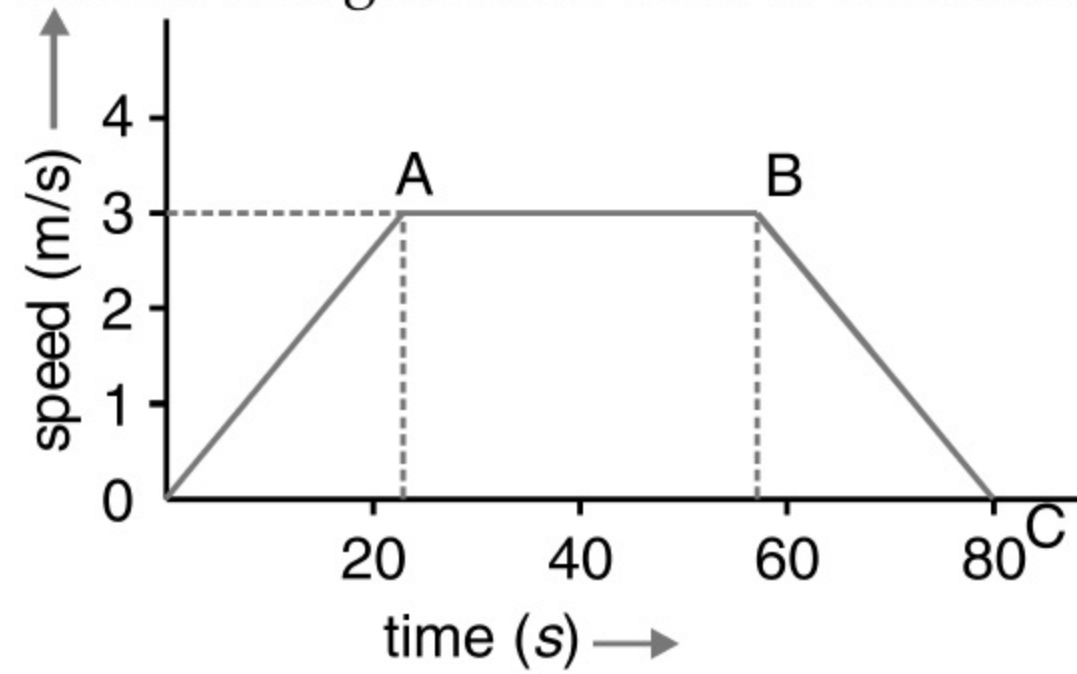
Reason : The intermixing of particles of two different types of matter on their own is called diffusion.

20. **Assertion :** A solution can scatter a beam of light passing through it.

Reason: The particles of solution are smaller than 1 nm in diameter.

Section 'B'

21. Study the speed time graph of a car alongside and answer the following questions :



Scale :

1 cm = 20 m/s on Y axis

1 cm = 20 sec on X axis

- (i) What type of motion is represented by OA ?
- (ii) Find acceleration from B to C.
- (iii) Calculate the distance covered by the body from A to B. Give reasons for your answer.

OR

A car travelling at a speed of 10 m/s is brought to rest in 20 seconds by applying brakes. Calculate the acceleration and distance travelled during this time.

22. Associate the following features with groups in which they first appeared.

- | | |
|---------------------------|----------------|
| (i) Vascular tissues | (ii) Notochord |
| (iii) Seeds inside fruits | |

OR

Name three plants under the group Thallophyta. Mention three characteristics of this group.

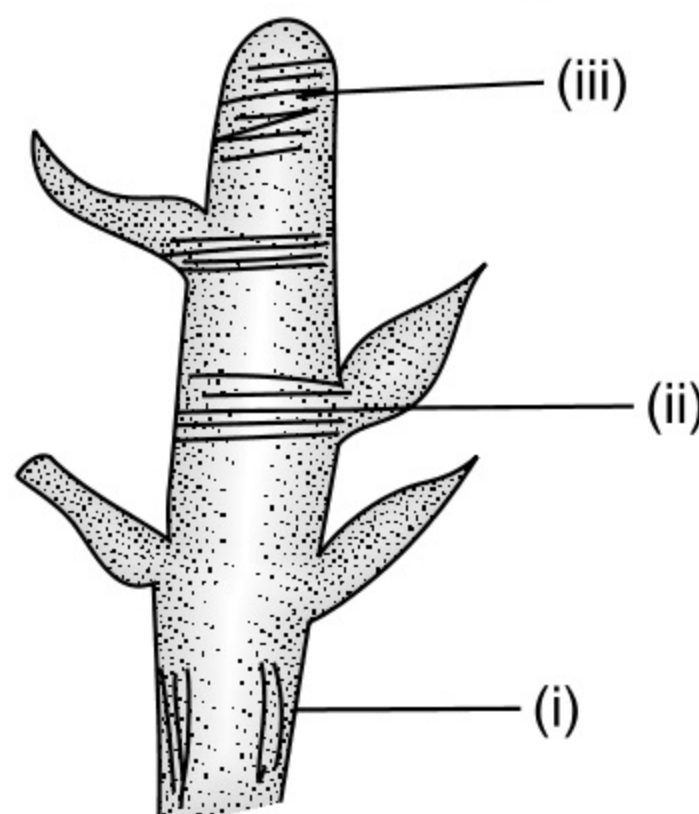
[AI] 23. Differentiate between compost and vermi compost. Write any three points of difference.

24. (a) Classify the following as homogeneous or heterogeneous mixture : Air, Soil, Filtered tea, Wood.
- (b) Which of the following materials are categorized as pure substance?
 - (i) Mercury, (ii) Milk, (iii) Calcium oxide, (iv) Ink.

OR

- [AI]** (a) Name the compound formed on heating a mixture of iron filing and sulphur.
 - (b) If dilute HCl is added to above compound then name the gas evolved and write down its two properties.
25. The percentage of three elements—calcium, carbon and oxygen in a sample of calcium carbonate is given as :
 Calcium = 40%; Carbon = 12.0%; Oxygen = 48% If the law of constant proportion is true, what weight of these elements will be present in 1.5 gm of another sample of calcium carbonate ? (Atomic mass of Ca = 40 u, C = 12 u, O = 16 u)

[AI] 26. Label the following and give one function of each part labelled (i), (ii) and (iii).



27. A motor car of mass 1200 kg is moving along a straight line with uniform velocity of 90 km/h. Its velocity is slowed down to 18 km/h in 4 s by an unbalanced external force. Calculate the acceleration and change in momentum. Also calculate the magnitude of external force acting on it.
- [AI]** 28. What do you mean by buoyancy? Why does an object float or sink when placed on the surface of water?
29. When a force retards the motion of a body, what is the nature of work done by the force? State reason. List two examples of such a situation.
- [AI]** 30. Explain how the human ear works?

Section 'C'

31. (i) A motor car with its glass totally closed is parked directly under the sun. The inside temperature of the car rises very high. Explain why?
 (ii) How are root nodules useful for the plants?
- [AI]** 32. (a) Mention the physical state of water at :
 (i) 100°C (ii) 0°C.
 (b) Convert the following temperature into Celsius scale :
 (i) 298 K (ii) 300 K
 (iii) 280 K

OR

- (i) List any two properties that liquids have in common with gases.
 (ii) Give two reasons to justify that an iron almirah is a solid at room temperature.
 (iii) What happens to the heat energy which is supplied to the solid once it starts melting?
- [AI]** 33. On the basis of number of cells living organisms are classified as unicellular and multicellular.
 (i) Name two unicellular organisms.
 (ii) What is meant by division of labour in multicellular organisms?
 (iii) Name one prokaryotic and one eukaryotic unicellular organism.
 (iv) 'Every multicellular organism has come from a single cell.' Justify this statement.
 (v) Write one common feature between an Amoeba and white blood cells of humans?

OR

In the given figure of an animal cell as observed under an electron microscope.



- (i) Name the parts labelled as 1 to 10.
 (ii) Which parts are concerned with the following functions :
 (a) Release of energy,
 (b) Protein synthesis,
 (c) Transmission of hereditary characters from parents to their offsprings.
 (iii) Mention any two structures, found only in plant cell not in animal cell.

34. Read the following passage and with your own knowledge answer the following question :
In order to overcome the objections raised against Rutherford's model of the atom, Neil Bohr put forward the following postulates about the model of an atom.
- (i) Only certain special orbits known as discrete orbits of electrons are allowed inside the atom.
 - (ii) While revolving in discrete orbits the electrons do not radiate energy. Write the following statements in your answer book after completing them :
 - (a) Atoms are made up of , and
 - (b) amended Rutherford's shortcomings.
 - (c) Electrons do not radiate energy while revolving in orbits.
 - (d) Discrete orbits are also known as
 - (e) The K shell can accommodate electrons whereas L can accommodate electrons.
 - (f) Atomic mass of an element is the sum of the number of and
35. "Educating parents would help a lot in reducing the incidences of diseases in children. Justify the statement with five reasons.
36. (a) A bar of metal has a mass 200 g and a certain weight. Mass remains the same when weighed at equator but weight decreases. Why?
- (b) (i) Seema buys few grams of gold at the poles as per the instructions of one of her friends. She hands over the same when she meets her at the equator. Will the friend agree with the weight of gold bought ? If not, why ?
- (ii) If the moon attracts the earth, why does the earth not move towards the moon ?