Self Assessment Paper 1

Section 'A'

1. During summer, water kept in an earthen pot becomes cool because of the phenomenon of
   (a) Diffusion **(b)** Transpiration
   (c) Osmosis **(d)** Evaporation
2. Which of the following contains maximum number of molecules?
   (a) 1 g CO_2 **(b)** 1 g N_2
   (c) 1 g H_2 **(d)** 1 g CH_4
3. Which of the following can be made into crystal?
   (a) A bacterium **(b)** An Amoeba
   (c) A virus **(d)** A sperm

OR

AI The proteins and lipids, essential for building the cell membrane, are manufactured by
   (a) endoplasmic reticulum **(b)** golgi apparatus
   (c) plasma membrane **(d)** mitochondria

4. Viruses, which cause Hepatitis, are not transmitted through
   (a) air **(b)** water
   (c) food **(d)** personal contact

OR

AIDS cannot be transmitted by
   (a) sexual contact **(b)** hugs
   (c) breast feeding **(d)** blood transfusion
5. A particle is moving in a circular path of radius r. The displacement after half a circle would be
   (a) Zero **(b)** πr
   (c) $2r$ **(d)** $2\pi r$
6. Which one of the following is not the unit of energy?
   (a) Joule **(b)** Newton metre
   (c) Kilowatt **(d)** Kilowatt hour

OR

In case of negative work, the angle between the force and displacement is
   (a) 0° **(b)** 45°
   (c) 90° **(d)** 180°

AI 7. Well defined nucleus is absent in
   (a) Blue-green algae **(b)** Diatoms
   (c) Algae **(d)** Yeast

8. Which one is not a source of carbohydrate?
   (a) Taj Rice **(b)** Millets
   (c) Sorghum **(d)** Gram
9. What would happen, if all the oxygen present in the environment is converted to ozone?
   (a) We will be protected more.
   (b) It will become poisonous and kill living forms.
   (c) Ozone is not stable, hence it will be toxic.
   (d) It will help harmful sun radiations to reach earth and damage many life forms.

10. An object is put one by one in three liquids having different densities. The object floats with $\frac{1}{9}$, $\frac{2}{11}$ and $\frac{3}{7}$ parts of their volumes outside the liquid surface in liquids of densities d_1, d_2 and d_3 respectively. Which of the following statement is correct?

(a) $d_1 > d_2 > d_3$ **(b)** $d_1 > d_2 < d_3$

(c) $d_1 < d_2 > d_3$ **(d)** $d_1 < d_2 < d_3$

11. At what place on the earth's surface is the weight of a body minimum ?

AI **12.** The boiling point of alcohol is 78°C. What is the corresponding temperature on the Kelvin scale?

OR

A crystal of Copper sulphate is dropped in a glass of water and is allowed to settle at the bottom. After some time it is observed that the blue colour appears just above the solid crystal and with the passage of time whole water in glass turns blue. Identify the characteristic of particles of matter associated with this observation.

13. Name the particles which determine the mass of an atom.

OR

Write any two observations which support the fact that atoms are divisible.

14. Name the following tissues :

(i) Found in the iris of the eye. **(ii)** That connects two bones.

OR

What are the types of complex permanent tissues ?

AI **15.** Give one point of difference between balanced and unbalanced forces.

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:** Relative atomic mass of the atom of element is the average masses of the atom as compared to $\frac{1}{12}$**th** the mass of one carbon-12 atom.

Reason: Carbon-12 isotope is the standard reference for measuring atomic masses.

17. **Assertion :** Inert elements show zero valency.

Reason: Atoms of inert element has fully filled outermost orbit.

18. **Assertion:** No sound is heard when a simple pendulum oscillates in air.

Reason: A vibrating body produces sound.

19. **Assertion :** If a spring is stretched from one side, the size and shape of the spring changes.

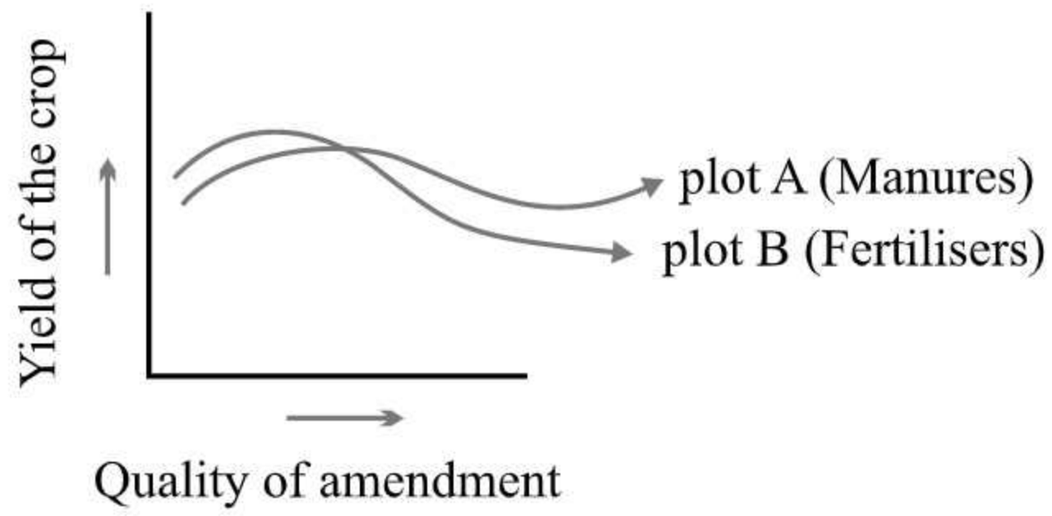
Reason : Unbalanced force acting on the spring changes the size and shape of the spring in the direction of application.

20. **Assertion:** Alloys are homogeneous mixture of metals.

Reason : Alloys cannot be separated into their components by physical methods.

Section 'B'

21. **(a)** The graph below shows two crop yields [plot A and B] that have been treated by manures and chemical fertilizers respectively, keeping other environmental factors same.



Answer the following questions :

(i) Why does plot B show sudden increase and then gradual decrease in yield ?

(ii) Why is the highest peak in plot A graph slightly delayed ?

(b) Name two plants that can be turned into green manure.

OR

A farmer found that *Xanthium* and *Parthenium* are also growing along with paddy in the field. What are such plants called ? How does the presence of these plants affect the crop yield ? List any 4 methods for controlling them.

22. **(i)** List any four characteristic properties of gases.

(ii) Steam produces more severe burns than boiling water. Why ?

OR

Prove that liquids have no fixed shape but have a fixed volume. Why the rate of diffusion of fluids is higher than that of solids.

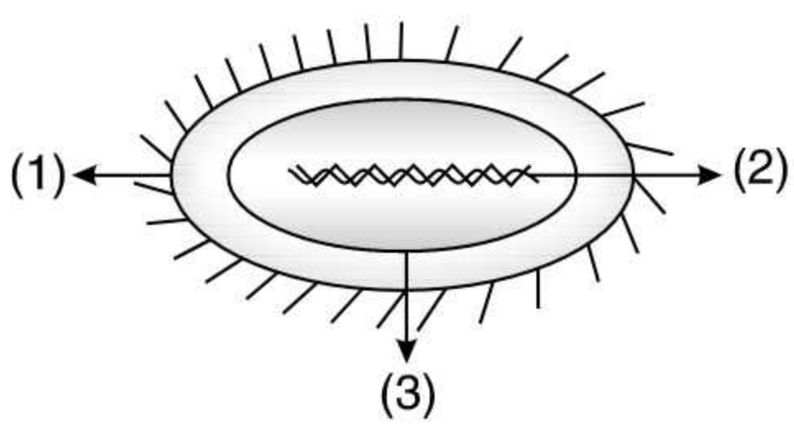
23. Atomic number and mass number of an element are 18 and 40 respectively. Identify the element and write the number of electrons and neutrons present in its atom. Show the schematic atomic structure of the atom.

AI **24.** Define Osmosis. In what two ways it is different from diffusion ?

OR

(a) Label the parts marked 1, 2, 3 in a prokaryotic cell.

(b) Mention any three features of prokaryotic cells.



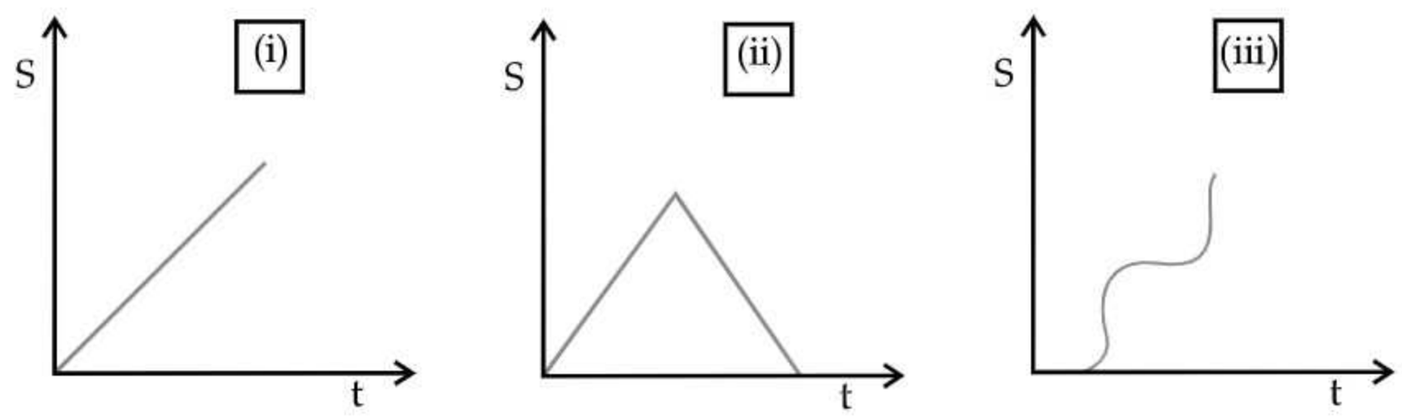
25. Give reasons for the following :

(i) Cells of sclerenchyma tissue have a narrow lumen.

(ii) Branches of a tree move and bend freely in high wind velocity.

(iii) It is difficult to pull out the husk of coconut.

26. Describe the motion represented by the following displacement time graphs :



27. State universal law of Gravitation. Derive an expression for gravitational force between the two bodies.

28. A block of wood of mass 6 kg and dimensions 50 cm × 30 cm × 20 cm is placed on a table top. Find the pressure exerted if the block lies on the table top with sides of dimension.

AI **(i)** 50 cm × 30 cm

(ii) 30 cm × 20 cm

29. **(i)** Define 1 kWh. Relate it to joules.

AI **(ii)** Find the energy in kWh in the month of September by four devices of power 100 W each, if each one of them is used for 10 hours daily.

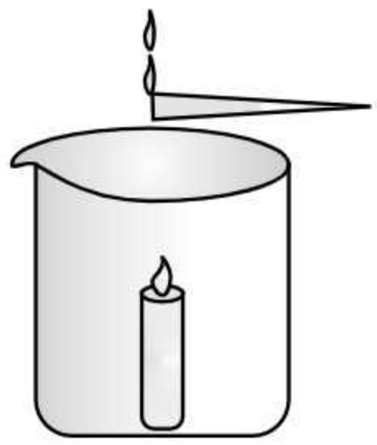
30. **(a)** Name the type of waves that can travel in gases.

(b) Name the wave which can travel in solids, liquids as well as gas.

(c) At any instant, a compression is formed at a point. After how much time period **(i)** a rarefaction, **(ii)** a compression will be formed at the same point?

Section 'C'

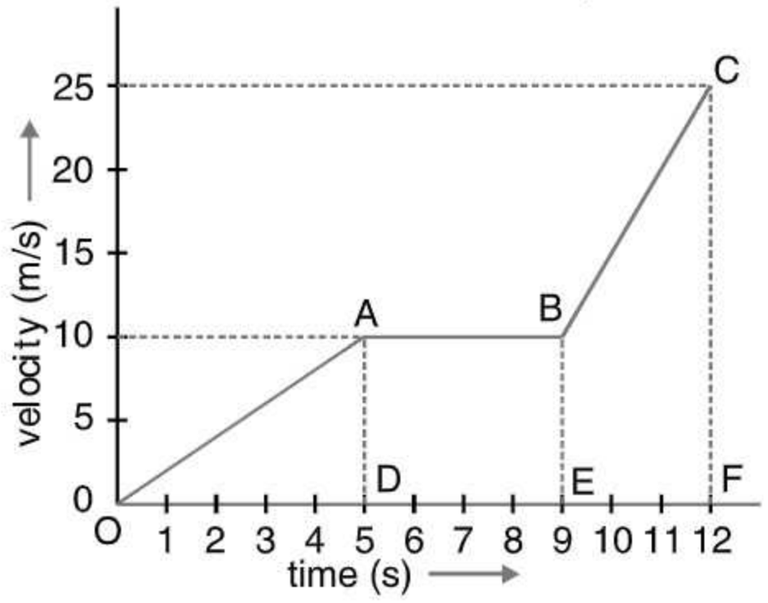
31. **(i)** Observe the diagram given below :



When the incense stick is kept near the edge of the mouth of the beaker, in which direction will the smoke flow? Give reason.

(ii) What role does the sun play in formation of soil?

32. **(i)** Find out acceleration over each of the intervals OA, AB and BC.



(ii) Calculate distance covered in last 3 seconds.

OR

(a) Draw the velocity time graph to show :

(i) the change in velocity of a freely falling body.

(ii) the change in velocity of a body thrown vertically upwards.

(b) Comment on the kind of motion of the body while : **(i)** it comes down **(ii)** it goes up.

33. What is a disease ? How do we know that a person is diseased ? What can be the various causes for a person getting diseased ?

34. **(i)** What is coelom ? State its significance.

AI **(ii)** Pick out the organisms that have a pseudocoelom from the following :
Earthworm, pinworm, tape-worm and roundworm.

(iii) What is peculiar about the coelom of Arthropods? What is such a condition called ? Explain.

(iv) To which phylum of Animalia do the following animals belong ?
Octopus, pila, chiton and unio ? Comment on their coelom.

OR

Schematically illustrate the classification of phanerogams. Give two examples of plants with vascular tissues, which do not produce seeds.

35. **(i)** State the law of conservation of mass. In a chemical reaction, 4.2 g of sodium hydrogen carbonate reacted with 3.0 g of ethanoic acid. The products obtained were 4.1 g of sodium ethanoate, 0.9 g of water and 2.2 g of carbon dioxide. Show that these observations are in agreement with the law of conservation of mass.

(ii) Define molecular mass. Find the relative molecular mass of calcium chloride. (Given Ca = 40 u; Cl = 35.5 u)

AI **36.** Classify different types of pure substances. Differentiate them on the basis of their chemical properties giving examples of each.