

## SECTION-A

- Q1. Name the following tissues : (1)
- (i) found in the iris of the eye.
  - (ii) that connects two bones.
- Q2. When a ball is dropped from a height, its speed increases gradually. Name the force which causes this change in speed. (1)
- Q3. Mass of an object is 5 gms on the moon. What will be its weight on earth ? ( $g=10\text{ms}^{-2}$ ) (1)
- Q4. How evaporation is different from boiling ? Give two points. (2)
- Q5. Name the simple permanent tissue which has living cells with thin walls. What is the function of this tissue in the stems and roots? (2)
- Q6. A particle is moving in a circle of diameter 5 m. Calculate the displacement and the distance covered when it completes three revolutions. (2)
- Q7. With the help of a flow diagram, show the process of obtaining different gases from air. If the boiling points of Oxygen, Argon and Nitrogen are  $-183\text{C}$ ,  $-186\text{C}$  and  $-196\text{C}$ , which gas forms the liquid first as the air is cooled ? (3)
- Q8. Is the interconversion of three states possible in matter? Illustrate with a schematic diagram. (3)
- Q9. (a) Why path of light is not visible in a solution when a beam of light is passed through it ? (3)
- (b) Classify each of following as solution, colloid or suspension :
- (i) a mixture whose particles are big enough to scatter a beam of light passing through it.
  - (ii) A mixture whose particles settles down when it is left undisturbed.

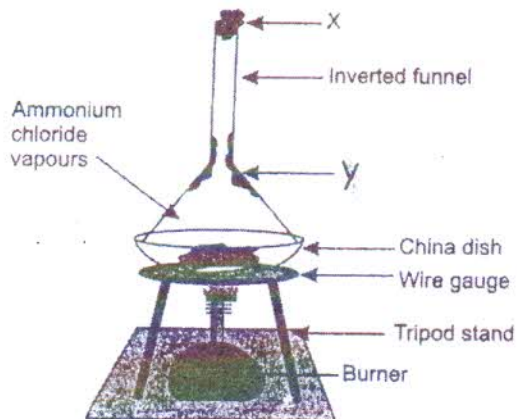
- Q10. Differentiate between the various types of meristematic tissues on the basis of location and function. (3)
- Q11. Draw neat and labelled diagrams of the various types of muscular tissues to show the difference between them. (3)
- Q12. A particle is thrown upwards with a speed of 39.2 m/s. Find (3)
- (a) the time for which it moves in the upward direction and  $\uparrow$
- (b) the maximum height it reached.  $76.8^{\times}$
- Q13. The following table show the distance travelled by three objects in every second. (3)

Time	Distance travelled (in m)		
	Object A $\downarrow$	Object B $\downarrow$	Object C $\downarrow$
1 <sup>st</sup> sec	10	5	12
2 <sup>nd</sup> sec	10	10	8
3 <sup>rd</sup> sec	10	15	15
4 <sup>th</sup> sec	10	20	17
5 <sup>th</sup> sec	10	25	12

- (a) Classify the motion of the three objects as uniform or non-uniform motion.
- (b) Who has travelled :
- (i) maximum and  $\uparrow$
- (ii) minimum distance in 4<sup>th</sup> sec ?  $56$
- (c) Calculate the total distance travelled by 'A'.  $56$

- Q14. A gun of mass 3 kg fires a bullet of mass 30 g. The bullet takes 0.003 s to move through the barrel (3)  
of the gun and acquires a velocity of 100 m/s. Calculate. *1 m/s*
- (i) The velocity with which the gun recoils
- (ii) The force exerted on gunman due to recoil of the gun. *1000 N*
- Q15. State Newton's first law of motion. Give its two examples. Why is it called law of inertia ? Explain (3)  
why it is easier to push an empty box than a box full of books?
- Q16. A body is moving along a straight line with a uniform acceleration. Draw velocity-time graph of (3)  
this body when initial its velocity  $u$  is not equal to zero. Using this graph, obtain the first  
equation of motion.
- Q17. As we need food for development, plants also require nutrients, which it gets from air, water and (3)  
soil. Deficiency of these nutrients affects growth and susceptibility to diseases.
- (i) Name the nutrients supplied by air and water to the plant.
- (ii) What are macro nutrients and why are they called so ?
- (iii) "Nature provides all the essentials for the plant growth and each component plays an  
important role". Learning from nature mention two values that everyone in a family should  
imbibe.
- Q18. (a) Name the term used for unwanted plants in cultivated field. (3)
- (b) Why do farmers remove them from crop field ? Mention two points.
- (c) Mention one control measure by which these can be killed.
- (d) Define hybridization.

- Q19. (a) How does fractional distillation differ from simple distillation process? Draw a labelled diagram of the apparatus used for fractional distillation. (5)  
 (b) How will you distinguish between a compound and a mixture? Mention any two points.
- Q20. (a) Define : Latent heat of fusion. (5)  
 (b) Look at the following figure and answer the questions given below.



- (i) What is X and what is its role?  
 (ii) What is the process known as?  
 (iii) Identify : Y.
- (c) List any two properties that liquids have common with gases.
- Q21. (a) Matrix of a connective tissue can be fluid or solid. Give one example of each kind of connective tissue. Write the composition of matrix in each type. Write one important function of each of the tissue. (5)  
 (b) Draw a well labeled diagram of the neuron.

- Q22. (i) Give reason : (5)
- (a) Value of 'g' is not same at poles and equator.
  - (b) Objects with different masses take same time to fall from a fixed height.
- (ii) Differentiate between g and G. Also derive the relation between them.

- Q23. A body weighs 30 kg on earth. Given that the mass of earth is  $6 \times 10^{24}$  kg, its radius is  $6.4 \times 10^6$  m,  $G = 6.7 \times 10^{-11} \text{ Nm}^2 \text{ kg}^{-2}$ . What will be : (5)
- (a) The force of attraction between the body and the earth <sup>292.5 N</sup>
  - (b) Acceleration produced in the body <sup>4.75</sup>
  - (c) Acceleration produced in the earth  <sup>$6.5 \times 10^{-6}$</sup>

- Q24. Mention the different kinds of irrigation systems adopted in India to supply water in agricultural lands depending on kinds of water resources available ? Discuss how these systems are useful to farmers. State the importance of building check dams. (5)

### SECTION - B

- Q25. The right sequence of steps to test the presence of starch in the given food material is : (1)
- (a) Take the material, boil in water, add iodine solution
  - (b) Take the material and add iodine powder on it
  - (c) Take the material, pour in cold water, then add safranin
  - (d) Take the material, crush it, add water if required then add iodine solution.

Q26. Sarita took the sample of arhar dal to laboratory from her house. She wants to test for the presence of the adulterant metanil yellow in it. She got confused in choosing reagent. Please help her to choose the same from the following (1)

- (a) Iodine solution                      (b) methylene Blue  
(c) Safranin                                (d) conc hydrochloric acid

Q27. A mixture of iron filings and sulphur powder can be easily separated by : (1)

- (a) using magnet                              (b) dissolving in carbon disulphide  
(c) dissolving in water                        (d) Both (a) and (b)

Q28. Which one of following is a mixture of an element and a compound? (1)

- (a) Carbon tetrachloride + water  
(b) Sulphur powder + iron filings  
(c) Kerosene + water  
(d) Sulphur + carbon disulphide

Q29. Following are the steps taken for performing the reaction between copper sulphate and Iron are : (1)

- (i) Prepare copper sulphate solution by dissolving a few crystals of copper sulphate on water  
(ii) Put some iron nails in it  
(iii) leave it for 5 minutes (iv) observe the change in colour of solutions  
(v) Take out the Iron nails and observe for any deposit on it

The correct result of above experiment is not as expected Identify the step that is missing out of the following :

- (a) Heat copper sulphate solution before putting iron nails  
(b) Cool copper sulphate solution before putting iron nails  
(c) Rub the iron nail with sand paper  
(d) Close the test tube with a cork

Q30. Alisha prepared a mount of a human cheek cell by staining it with methylene blue. But she did not see ribosome in the cell. This is because : (1)

- (a) Human cheek cells don't have ribosomes
- (b) They are too small to be seen under the compound microscope
- (c) Ribosomes don't get stained by methylene blue
- (d) The microscope was not focussed correctly

Q31. A student noted down the following observations while looking into a permanent slide under a microscope : (1)

- (i) Cells are long and cylindrical
- (ii) Light and dark bands are present giving striated appearance.

It could be a :-

- (a) slide of smooth muscle fibre.
- (b) slide of striated muscle fibre.
- (c) slide of neuron.
- (d) slide of parenchyma cells.

- Q32. The technique of sublimation is used to separate : (1)
- (a) Two non-volatile substance .
  - (b) Two volatile substances.
  - (c) Such solid substance which sublimes on heating from the non volatile substance.
  - (d) Two solid substances which have little affinity with each other.
- Q33. Two opposite forces of same magnitude acting on a body that do not change its state of rest or motion are called : (1)
- (a) Balanced force
  - (b) Unbalanced force
  - (c) Frictional force
  - (d) Gravitational force
- Q34. A mixture of sand, powdered glass and common salt is dissolved in water and then filtered. (2)  
Name the substance left on filter paper. Name the substance in the filtrate.
- Q35. In the determination of boiling point of water, state reason for the following: (2)
- (a) Pumice stone is added to water.
  - (b) Bulb of the thermometer is kept above the liquid.
- Q36. A student recorded the mass of dry raisins as 6.0g and mass of raisins after soaking them in water for about four hours as 10.5g. Calculate the percentage of water absorbed by raisins. (2)

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