

## Section A

- Q. 1** State the significance of membrane biogenesis. (1)
- Q. 2** State the condition under which a body travels a certain distance and yet its resultant displacement be zero. (1)
- Q. 3** Mention two activities undertaken for improvement of crop yield. (1)
- Q. 4** What is endocytosis? Name an organism that feeds by this method. (2)
- Q. 5** Chloroplast and mitochondria are referred to as semi-autonomous organelles. Justify. (2)
- Q. 6** State two differences between leucoplast and chromoplast. (2)
- Q. 7** A moving train is brought to rest in 20 seconds by applying brakes. Find the velocity with which the train was initially moving, if the retardation due to brakes is  $2\text{ m/s}^2$ . (2)
- Q. 8** (a) Why is milk considered to be a heterogeneous mixture?  
(b) A solution is made by dissolving 25 grams of sugar in 175 grams of water. Calculate the concentration of the sugar solution. (3)
- Q. 9** Suggest a suitable method to separate the components of these mixtures. Also write the basic principle of each method.  
(a) Butter from curd;  
(b) Oil from water;  
(c) Camphor from common salt. (3)
- Q.10** (a) Write the difference between uniform motion and non-uniform motion.  
(b) Mention the nature of the motion of a body whose distance-time graph is a straight line parallel to the time axis. (3)
- Q.11** (a) State Newton's third law of motion.  
(b) When a bullet is shot from a rifle, the rifle recoils back. Why? (3)
- Q.12** (a) What do you mean by inertia of a moving body?  
(b) Calculate the force required by a car to change its velocity from  $30\text{ m/s}$  to zero in 10 seconds. The mass of the car is  $1500\text{ kg}$ . (3)

**Q.13** (a) What is the effect on the gravitational force between two objects, if  
(i) the mass of one object is doubled?  
(ii) the distance between the 3 objects is doubled? **(3)**

**Q.14** (a) Differentiate between mass and weight.  
(b) A man buys 2Kg of gold at the poles. Will its weight increase or decrease at the equator? **(3)**

**Q.15** Give reason for each of the following:-  
(a) We get a crunchy and granular feeling when we chew pear fruit  
(b) Cells of sclerenchyma tissue have a narrow lumen. **(3)**

**Q.16** (a) Explain composite fish culture.  
(b) State one merit and one demerit of this system. **(3)**

**Q.17** (a) What is green manuring?  
(b) Why should preventive measures and biological control methods be preferred for crop protection? **(3)**

**Q.18** (a) Name the connective tissues which help in repair of tissues.  
(b) State the location of the tissue named above and also mention one of its functions. **(5)**

**Q.19** How will you separate a mixture containing petrol (boiling point  $95^{\circ}\text{C}$ ) and acetone (boiling point  $56^{\circ}\text{C}$ ) which are miscible with each other? Describe with the help of a well-labelled diagram. **(5)**

**Q.20** (a) Convert  $23^{\circ}\text{C}$  into Kelvin.  
(b) Name the technique which is followed in separation of iron pieces from metal scrap.  
(c) Name the types of colloids in which the dispersed phase and dispersing medium are respectively:  
(i) Solid and gas  
(ii) Solid and Solid  
(iii) Solid and liquid  
Also give one example of each. **(5)**

**Q.21** (a) Draw a well-labelled diagram of chloroplast.

(b) What happens when

(i) almonds are soaked in water?

(ii) concentrated solution of fertilizer is applied to green grass lawn?

Give a reason in support of your answer. **(5)**

**Q.22** (a) Give a reason for each of the following statement:-

(i) Evaporation causes cooling.

(ii) Heat is unbearable after rain in hot season.

(b) Compare the properties of colloid, suspension and true solution in a tabular form. **(5)**

**Q.23** (a) Draw the velocity-time for an object which is undergoing uniform retardation.

(b) Derive the second equation of motion, graphically.

(c) A stone is dropped from a height of 50m. Calculate its velocity just before it touches the ground. (take  $g=10\text{m/s}^2$ ) **(5)**

**Q.24** (a) While playing cricket, Karan advised his friend Rohan not to catch the ball when it is high in the air.

(i) Why did Karan advise him so?

(ii) What values would you appreciate in Karan's behavior? (any two)

(b) A bullet of 30g moving at 150m/s hits and sticks to a wooden block of 40kg. What is their combined velocity? **(5)**

### Section – B

**Q.25** The cellular component not seen while observing a slide of onion peel under lower Magnification of microscope is \_\_\_\_\_. **(1)**

(a) Cell wall

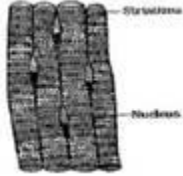
(b) Chromosome

(c) nucleus

(d) cytoplasm

**Q.26** Shivi, a student of class IX, observed the following structure in the slide under the microscope. The given diagram is \_\_\_\_\_. (1)

- (a) Cardiac Muscle
- (b) Striated muscle
- (c) Collenchymas
- (d) Nerve cell



**Q.27** Which one of the following is a suspension? (1)

- (a) Face cream
- (b) Jelly
- (c) Paints
- (d) Milk of Magnesia

**Q.28** Define water of crystallization. (1)

**Q.29** When magnesium ribbon burnt in the air, the product formed is in colour. 1

- (a) Silver
- (b) Brown
- (c) Yellow
- (d) Blue

**Q.30** Which stain is used for preparing temporary mount of animal cell? (1)

**Q.31** A permanent slide is observed by Ryan. He noticed this walled isodiametric cells with a large vacuole. The slide contains \_\_\_\_\_. (1)

- (a) Parenchyma cells
- (b) nerve cells
- (c) sclerenchyma cells
- (d) collenchymas cells

**Q.32** The boiling point of a liquid is very high, what does it indicate? (1)

**Q.33** Define the term 'balanced force'. (1)

**Q.34** Under which category of mixture will you classify alloys and why? (2)

**Q.35** Why is ice at 273 K more effective in cooling than water at the same temperature? (2)

**Q.36** (a) Name the protein present in muscles which is responsible for movement.

(b) Name the tissues that increase the girth of stem of a plant. (2)

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