



#### **General Instructions :**

The question paper consists of 15 questions divided into 5 sections A, B ,C , D & E.

Section A comprises 6 questions of 3 MCQ & 3 Assertion & reasoning 1 mark each.

**Section B comprises 2 questions of 2 marks each.**

**Section C comprises 1 questions of 3 marks each.**

**Section D comprises 3 questions of 5 marks each.**

**Section E** comprises 3 questions of 4 marks each

## **SECTION - A**

**ANSWER ALL EACH CARRIES ONE MARKS**



## **ASSERTION AND REASONING**

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

4. Assertion : A body is momentarily at rest when it reverses the direction.

Figure 1 shows the acceleration if its velocity is zero at a given time.

5. Assertion :A solution is a homogeneous mixture of two or more substances.

**Reason :** A solution scatters a beam of light passing through it.

6. Assertion : Plasma membrane is selectively permeable membrane

**Reason :** Plasma membrane allows some molecules pass through more easily than others.

## SECTION - B

**ANSWER ALL THE QUESTION EACH CARRIES TWO MARKS**

7. Distinguish between Balanced and unbalanced force.
8. 36 g of sodium chloride is dissolved in 100 g of water at 293 K. Find its concentration.

(OR)

What is Tyndall effect. Explain using example.

## SECTION - C

**ANSWER ALL THE QUESTION CARRIES THREE MARKS**

9. Why are improved poultry breeds developed? Describe the desirable traits for which new varieties are developed.

## SECTION - D

**ANSWER ALL THE QUESTION**

10. a) State and explain Newton's second Law of motion.  
b) Which would require a greater force accelerating a 2 Kg mass at  $5 \text{ ms}^{-2}$  or a 4 Kg mass at  $2 \text{ ms}^{-2}$ .
11. a) Is water an element or a compound? Give reason in support of your statement.  
b) Differentiate between mixtures and compounds
12. a) "Plasma membrane is also known as selectively permeable member" - justify the statement.  
b) Define membrane biogenesis.

(OR)

Write a brief note on discovery of cell.

## SECTION - E

**Case Based Questions:**

11. Read the following and answer the following questions.

Newton further studied Galileo's ideas on force and motion and presented three fundamental laws that govern the motion of objects. These three laws are known as Newton's laws of motion. The first law of motion is stated as:  
An object remains in a state of rest or of uniform motion in a straight line unless compelled to change that state by an applied force.  
In other words, all objects resist a change in their state of motion. In a qualitative way, velocity is called inertia. This is why, the first law of motion is also known as the law of inertia.

- i) A football and a stone has same mass, then both will have
- same inertia
  - same momentum
  - different inertia
  - different momentum
- ii) The inertia of a moving object depends on
- Mass of object
  - Momentum of object
  - Speed of object
  - Shape of object
- iii) When rubber ball held between hands is pressed, its shape changes. This happens because
- Balanced forces act on ball
  - Unbalanced forces act on ball
  - Frictional forces act on ball
  - Gravitational force acts on ball
- iv) There are two statements
- Newton's first law is valid for the pilot in an aircraft which is taking off.
  - Newton's first law is valid for the observer in a train moving with constant velocity.

Which of the following is correct?

- a) A only      b)B only      c)Both A & B d)None of the above

14. A homogeneous mixture of two or more substances is called a true solution. it consists of solute and solvent. The particle size of the true solution is less than 1 nanometer. A suspension is a heterogeneous mixture in which the solute particle does not dissolve but remains suspended throughout the bulk of the medium. A colloid is a mixture that is actually heterogeneous but appears to be homogeneous as the particles are uniformly spread throughout the solution

- i) Which type of mixture can be separated by filtration?
- a)true b)suspensions      c)colloids      d)all of these
- ii) Which statement is incorrect about the Tyndall effect.
- true solution shows tyndall effect
  - suspensions show the tyndall effect
  - colloid show tyndall effect
  - both a and b show the tyndall effect

iii) Which is the correct order of stability of solution

- a) true > colloid > suspension
- b) colloid > suspension > true
- c) colloid > true > suspension
- d) suspension > colloid > true

v ) Air is an example of

- a) heterogeneous mixture
- b) homogeneous mixture
- c) both a and b
- d) none of these

15. All living Organisms are made up of cells and these cells perform all the functions essential for the survival of the Organism eg. Respiration, digestion, excretion etc. In Unicellular organisms, a single cell carries out all these functions and in multicellular organisms different group of cells carry out different functions. Cells were first discovered by Robert Hooke in 1665. He observed the cells in a cork slice with the help of a primitive microscope. Leeuwenhoek (1674), with the improved microscope, discovered the free living cells in pond water for the first time. It was Robert Brown in 1831 who discovered the nucleus in the cell. Purkinje in 1839 coined the term 'protoplasm' for the fluid substance of the cell.

(1) Who discovered the cell?

- (a) Robert Hooke
- (b) Leeuwenhoek
- (c) Robert Brown
- (d) T. Schwann

(2) Who discovered the nucleus in the cell?

- (a) Robert Hooke
- (b) Leeuwenhoek
- (c) Robert Brown
- (d) T. Schwann

(3) Who coined the term 'Protoplasm'?

- (a) Robert Hooke
- (b) Leeuwenhoek
- (c) Robert Brown
- (d) Purkinje

(4) What is protoplasm?

- (a) Unit of life
- (b) Cell organelle
- (c) Fluid substance of the cell.
- (d) Cytoplasm

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