



**21. Assertion and Reasoning**

**Assertion (A):** Diabetes mellitus increases the blood sugar levels.

**Reason (R):** Insulin decreases the blood sugar levels.

- If both A and R are true and R is correct explanation of A
- If both A and R are true but R is not the correct explanation of A
- A is true but R is false
- both A and R are false

22. What are Okazaki fragments?

**Part -III**

**Answer any seven questions (Q.No:32 is Compulsory)**

**7 x 4 = 28**

- List any four properties of light
- Explain the experiment of measuring the real and apparent expansion of a liquid with a neat diagram.
- The electronic configuration of metal A is 2,8,18,1. The metal A when exposed to air and moisture forms B a green layered compound. A with con.  $H_2SO_4$  forms C and D along with water. D is a gaseous compound. Find A,B,C and D.
- a) What happens when  $MgSO_4 \cdot 7H_2O$  is heated? Write the appropriate equation      b) Define solubility
- Differentiate the following
  - Monocot root and Dicot root
  - Aerobic and Anaerobic respiration
- Explain the male reproductive system of rabbit with a labelled diagram.
- Differentiate between systole and diastole. Explain the conduction of heart beat.
- Our body contains a large number of cells 'L' which are the longest cells in the body. L has long and short branch called as 'M' and 'N' respectively. There is a gap 'O' between two 'L' cells, through which nerve impulse transfer by release of chemical substance 'P'.
  - Name the cells L
  - What are M and N?
  - What is the gap O?
  - Name the chemical substance
- (a) Name the gaseous plant hormone. Describe its three different actions in plants.  
(b) Which hormone is known as stress hormone in plants? Why?
- How is the structure of DNA organised? What is the biological significance of DNA?

**Part -IV**

**Answer all the questions :**

**3 x 7 = 21**

- a) i) State and prove the law of conservation of linear momentum.  
ii) If a 5 N and a 15 N forces are acting opposite to one another. Find the resultant force and the direction of action of the resultant force      **(Or)**
- i) What connection is used in domestic appliances and why?  
ii) What are the advantages of LED TV over the normal TV?  
iii) List the merits of LED bulb.
- a) i) Give the salient features of "Modern atomic theory".  
ii) Calculate the % of each element in calcium carbonate. (Atomic mass: C-12, O-16, Ca -40)      **(Or)**
- i) Metal A belongs to period 3 and group 13. A in red hot condition reacts with steam to form B. A with strong alkali forms C. Find A,B and C with reactions  
ii) What is rust? Give the equation for formation of rust.  
iii) State two conditions necessary for rusting of iron.
- a) i) Write the characteristics of insect pollinated flowers.  
ii) With a neat labelled diagram describe the parts of a typical angiospermic ovule.      **(Or)**
- i) Define stimulus.  
ii) With a neat labelled diagram explain the structure of a neuron.

Prepared by

**A.YOVANPETER, M.Sc., B.Ed.,**

B.TASST SCIENCE

www.kalviexpress.in  
ST. JOSEPH'S COLLEGE HR SEC SCHOOL TRICHY-2  
Cell : 9786451463