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**I Semester B.Sc. Degree Examination, August - 2021****BIOTECHNOLOGY****Cell Biology And Genetics****(CBCS Scheme Repeaters)****Paper : I****Time : 3 Hours****Maximum Marks : 70****Instructions to Candidates :**

- 1) All Sections are compulsory.
- 2) Draw neat labelled diagrams wherever necessary.

**SECTION - A****I. Write short notes on the following.****(5×2=10)**

- 1) S - phase.
- 2) Receptor proteins.
- 3) Vacuole.
- 4) Incomplete dominance.
- 5) Test cross.

**SECTION - B****II. Answer any Four of the following.****(4×5=20)**

- 6) Explain the functions of plasma membrane.
- 7) What is sex determination? Explain ZO - ZZ and ZW - ZZ systems.
- 8) Explain the types of RNA and their functions.
- 9) What is Down's syndrome? Explain its features.
- 10) Describe the structure and functions of mitochondrion.

**SECTION - C****III. Answer any THREE of the following.****(3×10=30)**

- 11) Explain the structure and functions of Chloroplast.
- 12) Explain different phases of mitosis. Add a note on its significance.
- 13) Describe in detail ultra structure of plant cell. Add a note on the functions of vacuole.

**[P.T.O.]**



- 14) Illustrate supplementary gene interaction in poultry fowls.
- 15) a) A man belonging to blood group 'A' marries a woman belonging to blood group 'AB'. What will be the blood groups of their probable children?  
b) Explain cytoplasmic inheritance in Paramecium.

**SECTION - D**

IV. Answer the following in **One** word or a sentence each.

(10×1=10)

- 16) What is cell senescence?
- 17) Who discovered ribosome?
- 18) What are base analogues?
- 19) What is karyokinesis?
- 20) Where do balbiani rings occur?
- 21) Name a physical mutagen
- 22) What are allosomes?
- 23) Give an example for female heterogamety.
- 24) Who proposed nucleosome model of chromosome?
- 25) Give Dihybridcross  $F_2$  ratio.

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