CBCS SCHEME

USN ☐☐☐☐☐☐☐☐☐☐ **18BT35**

Third Semester B.E. Degree Examination, Dec.2019/Jan.2020
Cell Biology and Genetics

Time: 3 hrs. Max. Marks: 100

Note: *Answer any FIVE full questions, choosing ONE full question from each module.*

Module-1

1 a. Mentioning the various cell membrane models, explain the universally accepted membrane organization model. **(10 Marks)**
   b. Describe the structure, assembly and functions of microtubules. **(10 Marks)**

OR

2 a. Write a critical note on the chemical composition and formation of microfilaments. **(10 Marks)**
   b. Outline the modification of cytosketal protein with reference to cytoskeletal architecture. **(10 Marks)**

Module-2

3 a. With a neat labeled diagram, explain the Meiotic – 1 Cell division mechanism. **(10 Marks)**
   b. Write explanatory note on structure and function of nucleus. **(10 Marks)**

OR

4 a. In detail, explain the process of amoeboid movement. **(10 Marks)**
   b. Apoptosis follows controlled predictable routine, hence is called Programmed Cell death. Discuss the concept. **(10 Marks)**

Module-3

5 a. Quoting example, explain Mendalian law of independent assortment. **(10 Marks)**
   b. Explain in detail the Avery and McLeod experiment to prove DNA as genetic material. **(10 Marks)**

OR

6 a. A cross between pure breeding red flower plant (R_1R_1) and pure breeding white flowered plant (R_2R_2) results in pink plants (R_1R_2). If F_2 off springs produces all three traits. What will be the genotype ratio? **(10 Marks)**
   b. Write a critical note on Multiple alleles referring to blood group as example. **(10 Marks)**

Module-4

7 a. Write a elaborate note on the Chemical Composition of Chromatin. **(10 Marks)**
   b. Write explanatory note on Giant Chromosome. **(10 Marks)**

OR

8 a. Outline in detail Hardy Weinberg law. Add a note on genetic equilibrium. **(10 Marks)**
   b. Write explanatory note on Induced Mutation. **(10 Marks)**

Module-5

9 a. In detail, explain the mechanism of sex determination in animals. **(10 Marks)**
   b. Explain about Hemophilia as a sex linked chromosomal disorder. **(10 Marks)**

OR

10 a. Explain Chromosomal theory of inheritance Citing non-disjunction as proof. **(10 Marks)**
    b. Write explanatory note no Linkage Maps. **(10 Marks)**

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