USN ⬚⬚⬚⬚⬚⬚⬚⬚⬚⬚ **18BT35**

Third Semester B.E. Degree Examination, Aug./Sept.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. Enumerate the difference between Prokaryotic and Eukaryotic cell. (08 Marks)
 b. Explain in detail about structure and function of microtubules. (06 Marks)
 c. Write a short note on Cytoskeleton architecture. (06 Marks)

OR

2 a. What are Intermediate filaments? Describe different classes of Intermediate filament. (10 Marks)
 b. Explain the structural organization of Eukaryotes. (10 Marks)

Module-2

3 a. Illustrate the difference between Mitosis and Meiosis. (08 Marks)
 b. Describe structure and function of Ribosomes. (06 Marks)
 c. Write a short note on all locomotary organ - cilia. (06 Marks)

OR

4 a. Explain interaction between cell surface plays a important role in development and function of multicellular organisms. (10 Marks)
 b. Describe forms , types and function of endoplasmic recticulum. (10 Marks)

Module-3

5 a. Explain Mendel's law of segregation and independent assortment by taking suitable example. (08 Marks)
 b. Define Gene interaction. Explain complementary Gene interaction by taking flower colour in sweet peas. (06 Marks)
 c. What is Epitasis? Explain dominant epitasis, with suitable example. (06 Marks)

OR

6 a. Explain classic experiments that identifies DNA as the genetic material. (10 Marks)
 b. What are multiple allelee? Explain multiple allelie by taking coat colour of rabbit as example. (10 Marks)

Module-4

7 a. Explain the structural organization of nucleosomes. (08 Marks)
 b. Explain the structure of polytene chromosomes with neat diagram. (06 Marks)
 c. Write a short note on Eugenics. (06 Marks)

OR

8 a. Define Gene frequency. Explain Hardy Weinberg principle for equilibrium estimation. (10 Marks)
 b. Explain in detail about Spontaneous and Induced mutation. (10 Marks)
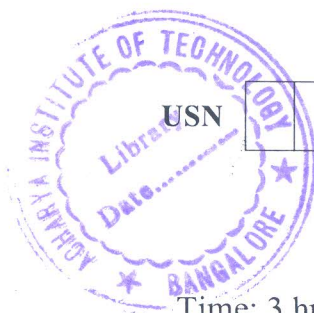
Module-5

9 a. Explain XX – XY , XX – XO , ZW – ZZ , ZO – ZZ type of sex determination in animals.

(08 Marks)

   b. What are chromosomes? Explain its morphology. (06 Marks)

   c. Write a short note on Crossing over. (06 Marks)

OR

10 a. Explain sex linked inheritance molecular disease by taking colour blindness and hemophilia as example. (10 Marks)

   b. Define Linkage. Explain type of linkage map with suitable example. (10 Marks)

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