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Total No. of Printed Pages: [01]

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B.Sc. (Hons.) Agriculture (Semester – 2nd)

FUNDAMENTALS OF GENETICS

Subject Code: BAGRS1-256

Paper ID: [21130117]

Time: 03 Hours

Maximum Marks: 60

Instruction for candidates:

1. Section A is compulsory. It consists of 10 parts of two marks each.
2. Section B consist of 5 questions of 5 marks each. The student has to attempt any 4 questions out of it.
3. Section C consist of 3 questions of 10 marks each. The student has to attempt any 2 questions.

Section – A

(2 marks each)

Q1. Attempt the following:

- a. Define the chromosome and its types.
- b. Define cell and cell theory.
- c. What are cell division and its types with definition?
- d. Write the name of sex limited and sex influenced traits.
- e. Write down the types of crossing over.
- f. What is structural variation of chromosomes aberration and their types?
- g. What is difference between qualitative and quantitative traits?
- h. Define the genetic materials and its types.
- i. What do you mean by biochemical genetics?
- j. What is gene concept and write down their types.

Section – B

(5 marks each)

- Q2. What do mean by chromosomal theory of inheritance.
- Q3. What is the centromere? Describe the types of centromere.
- Q4. What is mitosis? Describe the stage of mitosis with diagram.
- Q5. Write down the complementary gene action with suitable example.
- Q6. Explain the multiple factor hypotheses with suitable example.

Section – C

(10 marks each)

- Q7. Explain the law of independent segregation on nonalleles with the help of a suitable example. Describe the results obtained from a test cross of a dihybrid F1.
- Q8. What is polyploidy? Describe the allopolyploids and their application in crop improvement.
- Q9. Explain the DNA replication? Describe the types of DNA Replication with diagram.