

**B. Sc Part III Examination – 2020 (Internal Assessment)**  
**(Honours)**

Subject:

Name of the student:

Roll No:

Registration no. with Year:

Paper:

Full marks:

Submission deadline: 19<sup>th</sup> July, 2020 by 5.00 PM.

Email: [rsmbotany@gmail.com](mailto:rsmbotany@gmail.com) or WhatsApp

**Paper VII (Cell Biology, Genetics, Plant Breeding and Biostatistics)**

Answer any one question each from group A and group B. (FM-20)

**Group-A (Cell Biology)**

Q1. What is meant by cell cycle? List out the differences between mitosis and meiosis. (2+8)

Q2. What is Golgi complex? Give an account of structure and functions of Golgi complex. (2+8)

**Group-B (Genetics, Plant Breeding and Biostatistics)**

Q1. Why did Mendel use pea plant as the experimental material in his hybridization experiment? Define and explain Mendel's law of segregation. (2+8)

Q2. What is male sterility? Mention different types of male sterility. How are they utilized in plant breeding? (2+4+4)

## **Paper VIII (Plant Physiology, Plant Biochemistry and Pharmacognosy)**

Answer any one question each from group A and group B. (FM-20)

### **Group-A (Plant Physiology)**

Q1. (3+6+1)

- i. Write the differences between PS-I and PS-II.
- ii. Give a detailed account of Calvin cycle.
- iii. Write the full form of RUBISCO.

Q2. (5+2+3)

- i. Describe the structure of Nitrogenase enzyme.
- ii. What is leghemoglobin.
- iii. Write the physiological role of auxin in apical dominance.

### **Group-B (Biochemistry and Pharmacognosy)**

Q1. Write a short note on structure and classification of amino acids (10)

Q2. Describe the different types of secondary structures of a polypeptide. (10)

## **Paper IX (Microbiology and Plant Biotechnology)**

Answer any one question each from group A and group B. (FM-20)

### **Group-A (Microbiology)**

Q1. (5+5)

- i. Write a short note on Bacteriophage
- ii. Differentiate the lytic and lysogenic life cycle of phage virus.

Q2. Write short notes on (5+5)

- i. Ultrastructure of bacterial cell wall
- ii. Ultrastructure of bacterial flagella

### **Group-B (Plant Biotechnology)**

Q1. (5+5)

- i. What is artificial seed? How is it prepared?
- ii. Discuss the advantages of micropropagation.

Q2. (2+8)

- i. What do you mean by DNA sequencing?
- ii. Mention the steps of PCR technology and state its important applications.

### **Paper X (Microbiology, Cell Biology, Genetics and Plant Breeding) (Practical)**

Answer any two (2) from the following. All the questions are of 10 marks.

Q1. Write the principle, requisitions and procedure of study of curd microflora.

Q2. Write the principle, methodology of the study of mitosis in *Allium cepa*.

Q3. Define mean, mode, median, standard deviation and standard error. Write their formulas.

Q4. What is the significance of chi-square test as a test of goodness of fit. Write the formula of chi-square. Mention the application and limitation of chi-square test.

### **Paper XI (Plant Physiology and Biochemistry and Pharmacognosy) (Practical)**

Answer any two (2) from the following. All the questions are of 10 marks.

Q1. Mention the light qualities in which the rate of photosynthesis is highest and lowest. Write down the principle, requisition and procedure of an experiment regarding the effect of light quality on the rate of photosynthesis.

Q2. Discuss the difference between evaporation and transpiration. Write down the principle, requisition and procedure of an experiment regarding the relation between evaporation and transpiration.

Q3. Write a short note on Molisch's test. Discuss any two confirmatory tests for reducing sugar.

Q4. Write down the principle, chemical preparation and procedure of microscopic evaluation of powder drugs.