



B.Sc. (Semester – V) Examination, October/November 2018
BOTANY

Paper – X : (Genetics and Plant Breeding)

Duration : 2 Hours

Max. Marks : 80

- Instructions :**
- i) **All questions are compulsory, however internal choice is available.**
 - ii) **Briefly answer sub-questions in question 1 and question 2.**
 - iii) **Figures to the right indicate maximum marks to the question/sub-question.**
 - iv) **Draw appropriate labelled diagrams wherever necessary.**

1. Answer **any four** of the following :

16

- i) Explain the law of Independent Assortment.
- ii) List the factors and significance of crossing over.
- iii) Why does Serum agglutination occur, when blood of group A is mixed with blood of group B ?
- iv) Explain Maternal effect in relation to eye pigmentation in Flour moth.
- v) With an example, explain Back cross.
- vi) Enlist the characteristics features of cytoplasmic inheritance.

2. Answer **any four** of the following :

16

- i) List the characters of Quantitative genetics.
- ii) Write a note on Physiological races.
- iii) With an example, explain Sex limited characters.
- iv) Differentiate between Vertical and Horizontal resistance.
- v) Write a note on Heterogametic males.
- vi) Write the scientific names and centre of origin of the following plants :
 - a) Radish
 - b) Tamarind.



3. A) With a suitable example, explain Duplicate Dominant gene interaction. 6

OR

A) Explain Recessive interaction with a suitable example.

B) Explain Multiple allelism in relation to Plants. 6

4. A) Explain Cytoplasmic inheritance in *Mirabilis jalapa*. 6

OR

A) Describe Extra – Nuclear inheritance in yeast.

B) Write a note on mechanism of sex determination in *Drosophila*. 6

5. A) Discuss in brief Chromosome mapping technique using three point test cross. 6

OR

A) Discuss Coupling and Repulsion hypothesis.

B) Explain Quantitative inheritance in relation to skin colour in Man. 6

6. A) Write a note on the role of ICAR and ICRISAT in crop improvement. 6

OR

A) Write a note on Plant Breeder's rights.

B) Write a note on Genetics of pathogenecity. 6