2018

CBCS

3rd Semester

BOTANY

PAPER—C7T

(Honours)

Full Marks : 40

Time : 2 Hours

The figures in the right-hand margin indicate full marks.

Candidates are required to give their answers in their own words as far as practicable.

Illustrate the answers wherever necessary.

Genetics

1. Answer any *five* questions : 5×2

(a) Define Plasmon and Plasmagenes.

(b) What is the difference between double monosomic and Nullisomic ?

(c) Distinguish between 'Paracentric' and 'Pericentric' inversion.

(d) Define cis-trans complementation test.

(e) How does Sum Rule of Probability help to understand Mendelism ?

(f) What is 'Rh'-factor ? State its significance.

(g) What is coefficient of coincidence ?

(h) What are intercalating agents ? Give two examples.

2. Answer any *four* questions : 4×5

(a) Illustrate Hardy-Weinberg equilibrium. Define genetic drift. 3+2

(b) What is Penetrance ? Define 'coincidence' and 'interference' in relation to crossing over. 2+3

(c) What is Amphidiploidy ? Explain with the help of two examples the origin of new species of plants through polyploidy. 1+4

(d) Write a brief note on T_4 phage mentioning the significance of rII locus. 5

(e) What are Kappa Particles ? Explain the plastid inheritance in *Mirabilis* sp. 1+4

(f) What is the difference between dominance and co-dominance ? Mention the role of transposon as mutagen. 2+3

3. Answer any *one* question : 1×10

(a) Define centimorgan (cM). Explain with sketches the different types of translocations. Illustrate the molecular mechanism of recombination in the light of Holliday model. (2+4)+4

(b) Describe the mode of action of 5-bromouracil and nitrous acid as chemical mutagens. Define dominant epistasis with example. 5+5
