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NEPRT—100—2024

FACULTY OF SCIENCE

M.Sc. (NEP) (First Year) (Second Semester) EXAMINATION

APRIL/MAY, 2024

BOTANY

Paper SBOTC 1451

(Cell Biology, Genetics and Plant Breeding)

(Thursday, 18-04-2024)

Time : 10.00 a.m. to 1.00 p.m.

Time—3 Hours

Maximum Marks—80

N.B. :— (i) Question No. 1 is compulsory.

(ii) Of the remaining, attempt any three questions.

(iii) Draw neat and well labelled diagrams wherever necessary.

1. Write brief notes on the following :

20

(a) Euchromatin and heterochromatin

(b) Rh factor

(c) C-value paradox

(d) Male sterility.

P.T.O.

2. (a) Explain structure and functions of cytoskeleton. 10
- (b) Define cell cycle. Add a note on regulation and control of cell cycle. 10
3. (a) Describe the structure and regulation of gene expression in prokaryotes. 10
- (b) Give an account of structural aberrations in chromosomes. 10
4. (a) Describe epistatic gene interaction with a suitable example. 10
- (b) Describe sex linked inheritance in man with suitable example. 10
5. (a) Describe the methods of plant breeding in self-pollinated crops. 10
- (b) Describe different types of cross pollination. 10
6. Write brief notes on the following : 20
- (a) Cell receptors
- (b) Dosage compensation
- (c) Genetic drift
- (d) Emasculation.