BOTANY (P.G.)

[CBCS]

M.Sc. Third Semester End Examination-2024

(Regular & Supplementary Paper)

PAPER-BOT-301

Full Marks: 40 ***Time: 02 Hrs.***

The figures in the right hand margin indicate marks.
Candidates are required to give their answers in their own words as far as practicable.
Illustrate the answers wherever necessary.

(Use separate answer script for each unit)

Unit – I

[Marks – 20]

[Cell Biology Genetics and Biotechnology]

Group - A

1. Answer any FOUR questions of the following: **1x4=4**

a. What is Nuclear pore complex?

b. What happens in the S phase of the cell cycle?

c. What is the function of H1 histone?

d. Who proposed the Holliday model of crossing over?

e. State one example of sex limited character.

f. What is a Barr body?

Group - B

2. Answer any TWO questions of the following: 4x2= 8

a. Discuss with diagram how variegated corn kernels are formed.

b. Diferentinte transition mutation from transversion mutation. Add a note on VSP repair mechanism. 2+2

c. Write short notes on FISH and GISH. 2+2

d. What is polytene chromosome? How is it formed? What is the function of M phase check point? 1+1+2

Group - C

3. Answer any ONE question of the following: 8x1=8

a. Discuss Hardy-Weinbeng hypothesis. Mention the molecular basis of recombinations. 5+3

b. Distinguish between euchromatin and heterochromatin.Draw and discuss the functions of a histone octamer. 5+3

Unit – II
[Marks – 20]
[Cell Biology Genetics and Biotechnology]

Group - A

1. Answer any FOUR questions of the following: 1x4=4

a. What is TALENs?

b. What is meant by organogenesis?

c. What is QTL?

d. What is meant by copy number?

e. What is fosmid?

f. Define Fusogen. Give example.

Group - B

2. Answer any TWO questions of the following: 4x2= 8

a. Draw and describe Yeast Artificial Chromosome [YACs]. 2+2

b. Mention the role played by inhibitors in transcription.

c. What are rectriction endonucleases? Write down a simple construction of a typical plasmid vector for cloning.

d. Write short notes on (i) Protoplast Culture and (ii) Chromosome walking. 2+2

Group - C

a. Answer any ONE question of the following: 8x1=8

b. What is apomixis? Give an overview of Marker Assisted Selection breeding [MASS]. 2+6

c. Discuss in details the construction of c-DNA library with suitable labelled diagrams. 5+3
