



Seat No. _____

H-003-1016046

B. Sc. (Sem. VI) (CBCS) Examination

April - 2023

Botany : B-601

*(Genetics, Molecular Biology, Biotechnology,
Horticulture, Plant Breeding and Anatomy) (Old Course)*

Faculty Code : 003

Subject Code : 1016046

Time : $2\frac{1}{2}$ / Total Marks : 70

Instructions :

- (1) This question paper contains five questions. All are compulsory.
- (2) Draw neat and labelled diagrams wherever necessary.
- (3) Figure to the right indicate marks.

- 1 (a) Objective type question : 4
- (1) Define : Linkage.
 - (2) What is Gametic mutation ?
 - (3) Write function of m-RNA.
 - (4) Who is father of genetics ?
- (b) Answer in brief : (any one out of two) 2
- (1) Write the polyploidy.
 - (2) Write short note : r-RNA.
- (c) Answer in detail : (any one out of two) 3
- (1) Explain structure of m-RNA.
 - (2) Write the gene scan.
- (d) Write a note on : (any one out of two) 5
- (1) Describe the structure of t-RNA.
 - (2) Write note on crossing over.
- 2 (a) Objective type questions : 4
- (1) Write the function of restriction endonuclease.
 - (2) Who discovered the plasmid PBR322 ?
 - (3) What is cloning in a vector ?
 - (4) What is blotting Technique ?

- (b) Answer in brief : (any one out of two) **2**
- (1) Write the short note PBR322 as vector.
 - (2) Write the characteristic feature of plasmid vector.
- (c) Answer in detail : (any one out of two) **3**
- (1) Explain three name of restriction endonuclease enzymes.
 - (2) Describe the importance of vector in cloning techniques.
- (d) Write a note on : (any one out of two) **5**
- (1) Write the Lac Operon concept.
 - (2) Discuss nucleic acid hybridization techniques.
- 3** (a) Objective type question : **4**
- (1) Write the full form of BT.
 - (2) The optimum PH of MS medium is _____.
 - (3) Define Ex Plant
 - (4) What is cryopreservation ?
- (b) Answer in brief : (any one out of two) **2**
- (1) Write the application of tissue culture.
 - (2) Discuss the limintation for successful cryopreservation.
- (c) Answer in detail : (any one out of two) **3**
- (1) Write the advantage of transgenic plants.
 - (2) Give the sterilization technique in plant tissue culture.
- (d) Write a note on : (any one out of two) **5**
- (1) Describe the preparation of MS medium in tissue culture.
 - (2) Describe the disadvantage of production of genetically modified crops.
- 4** (a) Objective type question : **4**
- (1) What is Hybrid ?
 - (2) Explain term : Clone
 - (3) What is Layering ?
 - (4) Define - Horticulture.
- (b) Answer in brief : (any one out of two) **2**
- (1) Write note on whip grafting.
 - (2) Explain Tongue Grafting.

- (c) Answer in detail : (any one out of two) **3**
(1) Write the budding as vegetative propagation method.
(2) Describe the bulk method.
- (d) Write a note on : (any one out of two) **5**
(1) Explain layering as vegetative propagation method.
(2) Discuss pedigree method of hybridization.
- 5** (a) Objective type question : **4**
(1) Write the one disadvantage of mass selection.
(2) Write the function of Xylem.
(3) What is sieve elements ?
(4) Write the function of Phloem.
- (b) Answer in brief : (any one out of two) **2**
(1) Write the colenchymatous tissue.
(2) Explain the Tracheids
- (c) Answer in detail : (any one out of two) **3**
(1) Describe the phloem tissue with figure.
(2) Explain the anomalous secondary growth in bougainvillea stem.
- (d) Write a note on : (any one out of two) **5**
(1) Explain the anomalous secondary growth in Salvadoria stem.
(2) Describe double staining method.
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