



RX-003-001611

Seat No. _____

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

March - 2019

Botany : Paper - B - 601

*(Genetics, Molecular Biology, Biotechnology, Bioinformatics
And Anatomy)*

(Old Course)

Faculty Code : 003

Subject Code : 001611

Time : $2\frac{1}{2}$ Hours]

[Total Marks : 70

- Instructions :**
- (1) This question paper contains three questions. All questions are compulsory.
 - (2) Write answers of all the questions in main answer sheet.
 - (3) Draw neat and labelled diagram wherever necessary.
 - (4) Figures to the right side indicated full marks for the questions.

1 Objective type questions : 20

- (1) The length of different internodes in a culm of sugarcane is variable because of _____ tissue present.
- (2) ECORI is the example of _____
- (3) Define : Bioinformatics.
- (4) Restriction endonucleases are enzymes which restrict the action of enzyme _____ Polymerase.
- (5) Transgenic plant can be used as bioreactor. Is this true statement?
- (6) Which vector is used as a best genetic vector in plants?
- (7) Write the full form of ExPASy :

- (8) The main technique involved in agricultural biotechnology is called _____
- (9) What is the full form of NCBI ?
- (10) The use of colchicine is involved in production of _____
- (11) Extra nuclear inheritance (Cytoplasmic inheritance) is a consequence of presence of genes in _____ of cell organs.
- (12) In tissue culture roots can be induced by lower concentration of cytokinins and _____
- (13) Lal Bahadur Shastri biotechnology centre is situated at _____
- (14) Husk of coconut is made up of :
- (15) What are the constituents of phloem?
- (16) Give the full form of BLAST
- (17) Which tissue is known as living mechanical tissue?
- (18) Growth rings are formed due to activity of _____ and _____ Cambium.
- (19) Which of the following statements does not hold true for restriction enzyme?
 - (1) It recognises a palindromic nucleotide sequence
 - (2) It is an endonuclease.
 - (3) It is isolated from viruses.
- (20) DNA sequences that code for protein are known as _____

2 (A) Answer in short : (Any **Three**)

6

- (1) Write the four names of Restriction endonuclease.
- (2) Write the applications of tissue culture.
- (3) Discuss extraction of enzymes in short.
- (4) Write a note on: Sclerides.
- (5) Write a short note : Mass selection in plants.
- (6) Write the function of Parenchyma tissue (Any four).

- (B) Give the Answer : (Any **Three**) **9**
- (1) Discuss cytoplasmic inheritance in yeast.
 - (2) Describe the internal structure of a monocotyledonous stem.
 - (3) Describe the media preparation of tissue culture.
 - (4) What is Global and Local alignment?
 - (5) Draw the labelled diagram of salvadora stem.
 - (6) Give the different between xylem and phloem (six point required).
- (C) Answer in detail : (Any **Two**) **10**
- (1) Explain the Lac operon as gene regulation.
 - (2) Describe in detail modern concept of gene.
 - (3) Explain the xylem tissue with figure.
 - (4) Give the chart of double stain series.
 - (5) What do you mean by selection? Give name of the two methods of selection.
- 3** (A) Answer in short : (Any **Three**) **6**
- (1) What is tissue? Write the function of collenchyma.
 - (2) State the location and function of casperian strips.
 - (3) Write short note : BT Cotton.
 - (4) Explain: Basic concept of bioinformatics.
 - (5) Describe the polyploidy in plants.
 - (6) What are sticky ends? Under what conditions they get joined?
- (B) Give the Answer : (Any **Three**) **9**
- (1) Give the difference between simple tissue and complex tissue. (Any six points)
 - (2) Discuss : Bioinformatics is the brain of Biotechnology.
 - (3) Write the disadvantages of production of genetically modified crops.

- (4) Write three reasons of using plasmids and bacteriophages as cloning vectors.
- (5) Describe the phase of block preparation : Infiltration.
- (6) Give the six advantage of pure line selection.

(C) Answer in detail : (Any **Two**) **10**

- (1) Give diagrammatic representation of the summary of recombinant DNA technology.
- (2) Explain sequence databases.
- (3) Explain anomalous secondary growth in Bougainvillea.
- (4) Discuss cytoplasmic inheritance in *Mirabilis jalapa*.
- (5) Write a note on: Protein data bank
