

B.Sc. Semester - 6 (CBCS) Examination

March/April -2019

GENETICS, MOLECULAR BIO, BT, HORTI, PLANT BREED AND ANATOMY (CORE)

Time: 2:30 Hours

Marks: 70

Instructions:

1. All questions are compulsory.
2. Figures to the right indicate marks.

Q-1 Answer the following questions as per instruction.**(A) Answer in very short (any three) :**

03

1. Name the phenomenon in which two or more genes remain together generation after generation.
2. **Complete the statement:** Mutation which not passed to the next generation by sexual means is called.....
3. In which arm of t-RNA, the stem does not end with loop?
4. True or False: In RNA, the purines and pyrimidines are not in equal amount.
5. What do you mean by Chiasmata?

(B) Answer in brief (any one):

04

1. What is coupling? Discuss event of coupling in *Lathyrus odoratus*.
2. Distinguish between: Spontaneous mutation and Induced mutation

(C) Answer in detail (any one):

07

1. What is chromosome map? Explain preparation of chromosome map.
2. Describe structure and function of m-RNA

Q-2 Answer the following questions as per instruction.**(A) Answer in very short (any three):**

03

1. Where Restriction enzymes are naturally found?
2. Match the column:

1. Southern blotting	A. Detect the protein
2. Northern blotting	B. Isolate a desired DNA
3. Western blotting	C. Separate desired m-RNAs

3. Define the term: Plasmids
4. Complete the statement: In lac operon, induction of gene expression occurs by binding with.....
5. Which technique is used for separation of DNA fragments?

(B) Answer in brief (any one):

04

1. Explain: The plane of cutting DNA
2. Describe the characteristic features of an ideal plasmid vector.

(C) Answer in detail (any one):

07

1. Explain concept of regulation of gene expression in prokaryotes.
2. Discuss the joining of foreign DNA fragment to a cloning vector.

Q-3 Answer the following questions as per instruction.**(A) Answer in very short (any three):**

03

1. Which Bacteria is used for production of insect resistant transgenic plants?

2. What do you mean by cross protection?
3. Define the term: Cryopreservation
4. Why sucrose is used in MS medium?
5. What is germplasm storage?

(B)Answer in brief (any one):

04

1. Write notes on transgenic plants with improved storage proteins.
2. Describe application of tissue culture in preparation of artificial seeds.

(C)Answer in detail (any one):

07

1. Discuss the various steps involved in Cryopreservation.
2. Explain composition of nutrient media.

Q-4 Answer the following questions as per instruction.

(A)Answer in very short (any three):

03

1. What is chip budding?
2. Give the term: The propagation of plants by planting the cut vegetative parts of plants.
3. Fill the blank: In cleft grafting,.....shaped cut is made at scion and ashaped is made on the stock.
4. What is Hybridization?
5. True or False? In process of Bulk method the degree of heterozygosity is decrease.

(B)Answer in brief (any one):

04

1. Enumerate the main objectives of plant breeding.
2. Explain a hybridization technique, Emasculation.

(C)Answer in detail (any one):

07

1. What is ground layering? Discuss the types of ground layering.
2. Explain the pedigree method with reference to plant breeding.

Q-5. Answer the following questions as per instruction.

(A)Answer in very short (any three):

03

1. Which is the dead component of phloem tissue?
2. True or false: The primary wall present between a pit pair develops a thickening in its central part called torus.
3. Why does xylem stain pink?
4. Which simple tissue is known as living mechanical tissue?
5. Name the microtome in which glass or Diamond knife is used for sectioning?

(B)Answer in brief (any one):

04

1. Explain: sectioning in anatomical studies
2. Write characteristics of Parenchyma with two examples of specialised Parenchyma cells.

(c)Answer in detail (Any one):

07

1. With the help of suitable diagrams, describe the structure and functions of phloem elements.
2. Give an illustrated account of anomalous secondary structure in Salvadora stem.
