647510 **BSCgneCC6010** **Seat No :_____**

B.Sc. Semester - 6 (*CBCS*) Examination
March/April-2023 (OLD COURSE)
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(A) Answer the following question. (Any One) **(07)**

1. Describe the structure of t-RNA
2. Explain- Somatic and spontaneous mutation.

Q.1(B) Answer the following questions. (Any One) **(04)**

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

Q.1(C) Answer the following questions. (Any Three) **(03)**

1. Fill in the blanks: When a t-RNA is charged with an amino acid, it is called _____
2. True or false: The number of crossing over between two genes is represented by percentage of crossing over.
3. Fill in the blanks: Copy choice model of crossing over was used by _____ in 1955.
4. Write the definition of gametic mutation?
5. Complete the statement: Mutation which not passed to the next generation by sexual means is called _____

Q.2(A) Answer the following question. (Any One) **(07)**

1. Describe blue white screening method.
2. Explain-Lac operon concept.

Q.2(B) Answer the following questions. (Any One) **(04)**

1. Describe the characteristic feature of an ideal plsmid vector.
2. Discus-Restriction endonuclease.

Q.2(C) Answer the following questions. (Any Three) **(03)**

1. Name the enzyme synthesized by structural gen-Z in lac operon.
2. Fill in the blanks: The direct intake of naked DNA from the culture medium by eukaryotic cells, is called _____
3. Which vector is used as a best genetic vector in plants?
4. Fill in the blanks: Eco RI is derived from _____
5. Complete the statement: In lac operon, inducation of gene expression occurs by binding with _____

Q.3(A) Answer the following question. (Any One) **(07)**

1. Discuss the role of different constituents of culture media?
2. Discuss the various steps involved in cryopreservation.

Q.3(B) Answer the following questions. (Any One) (04)

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

Q.3(C) Answer the following questions. (Any Three) (03)

1. Which Bacteria is used for production of insect resistant transgenic plants?
2. Write the full form of ICAR.
3. What is germplasm storage?
4. Which enzyme extracted from papaya tree is used in deworming?
5. Which is the most commonly used culture medium for plant cells and tissues?

Q.4(A) Answer the following question. (Any One) (07)

1. Describe different type of grafting method.
2. Explain Budding as vegetative propagation method.

Q.4(B) Answer the following questions. (Any One) (04)

1. Explain: Emasculation.
2. Describe: Pedigree Method.

Q.4(C) Answer the following questions. (Any Three) (03)

1. What is budding?
2. Fill in the blank: Breeding in which seeds of superior individuals are collected, bulked and sown repeatedly until a new variety is formed is called _____
3. True or false: The removal stamens from flowers of female parent before the dehiscence of anthers is called emasculation.
4. What is the hybridization?
5. Fill in the blanks: Mound layering is also known as _____

Q.5(A) Answer the following question. (Any One) (07)

1. Explain with figure anomalous secondary growth in Bougainvillea stem.
2. Describe the xylem tissue with figure.

Q.5(B) Answer the following questions. (Any One) (04)

1. Explain: Sectioning in anatomical studies.
2. Write characteristics of parenchyma with two examples of specialized parenchyma cells.

Q.5(C) Answer the following questions. (Any Three) (03)

1. What are complex tissues?
2. Name the three types of simple tissues.
3. Name one angiospermic plants which possess interxylary phloem.
4. Name the microtome in which glass or Diamond Knife is used sectioning?
5. Name the two types of ordinary microtome.

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