



Seat No.....

No. of Printed pages : 04

[37] [E+9] SARDAR PATEL UNIVERSITY

B.Sc. Examination Semester : IV Code : US04CBOT22

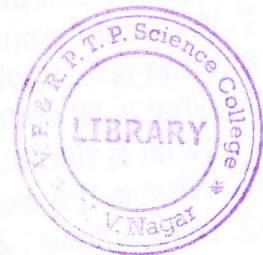
Subject : Plant anatomy, Embryology, Tissue culture and Basic
molecular Biology (BOTANY)

Date:13/04/22 Wednesday Time : 3.00 to 5.00 Total marks: 70

Q. 1 Multiple choice questions.

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1. Nectaries are present in floral part of family
(a) Musaceae (b) Euphorbiaceae (c) Papaveraceae (d) Malvaceae
2. The waxy substance associated with the wall of the cork cell is :
(a) Cutin (b) Suberin (c) Lignin (d) Hemicellulose
3. Bulliform cells are present on the leaf epidermis ofplant.
(a) Neem (b) Maize (c) Nerium (d) Tulsi
4. Who is the pioneer of Indian Plant embryology ?
(a) P. Maheshwari (b) B.M. Johri (c) P.D Sharma (d) A.C.Datta
5. Development of megaspore within ovule is known as:
(a) Parthenogenesis (b) Megasporogenesis
(c) Megagametogenesis (d) Embryogenesis
6. The first transgenic crop is :
(a) Flax (b) Pea (c) Tobacco (d) Cotton
7. Who performed transformation experiment in bacteria ?
(a) Louis Pasteur (b) Griffith (c) Macleod (d) none of these
8. Plant tissue culture technique is a redefined method of :
(a) Hybridization (b) Vegetative propagation
(c) Asexual reproduction (d) Sexual reproduction
9. Who is the father of Tissue culture ?
(a) Bonner (b) Gautheret (c) Laibach (d) Haber landt
10. The pyrimidine which present in DNA but absent in RNA.
(a) Cytosine (b) Thymine (c) Uracil (d) None of there



Q. 2 (A) Fill in the blanks.

1. Laticifers tissues are associated with (Stamen / Stem)
2. discovered pollen tube from pollen grain.
(G. B. Amici / W.A. Jensen)
3. Gene therapy is used to..... (Produce medicine / Treat and diagnose disease)
4. Chargaff's rule is applicable to.....
(Single stranded DNA / double stranded DNA)

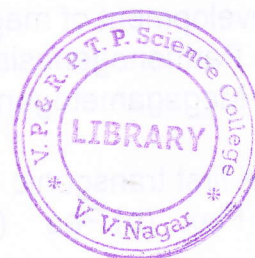
(B) True or False.

1. Abnormal secondary growth is found in Sunflower stem.
2. Flowers emit fragrance to purify air.
3. Haploid plants can be obtained from Anther culture.
4. Nucleic acids are the polymer of fatty acids.

Q. 3 Answer in short (Attempt any Ten).

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1. What are articulated and non- articulated Laticifers?
2. Write the Distribution and function of Nectaries.
3. Write the functions of Periderm.
4. Write the scope of Embryology.
5. Discuss : Flower as a modified determinate shoot.
6. What is Self and cross pollination?
7. Write the importance of Biotechnology.
8. What is Totipotency ?
9. What is Bt cotton ?
10. What is denaturation and renaturation ?
11. What is the experiment of Fraenkel-Conrat ?
12. Differentiate : Z- DNA and B - DNA.

**Q. 4 Long answer questions (Attempt any four).**

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- (1) Discuss the structure, function and types of Stomata.
- (2) What is Secondary growth? Describe secondary growth in Leptadenia stem.
- (3) Write short note on : Double fertilization.
- (4) Write comparative short note on : Pollination in Commelina and Sunflower.
- (5) Describe application of biotechnology in agriculture and industry.
- (6) Explain general process of plant tissue culture.
- (7) Discuss in brief, the structure of DNA and compare it with RNA
- (8) Discuss in brief about central dogma of molecular biology.