

[21/A-14]

SEAT No. _____

NO. OF PRINTED PAGES: 02

Sardar Patel University

B. Sc Biotechnology Fourth Semester

Monday, 8th April- 2019

10:00 a.m to 1:00 p.m.

US04CBIT02 (Applications of Biotechnology-II)

Total Marks: 70

Note: Figures to the right indicates marks.

Q.I Multiple Choice Questions

[10]

- 1) The determining agent responsible for trait was called _____
 - a) Factor
 - b) Recessive
 - c) Dominant
 - d) Allele.
- 2) Organelles genetics is also called _____
 - a) Chloroplast Inheritance
 - b) Plastid Inheritance
 - c) Mitochondrial Inheritance
 - d) All of these.
- 3) Paramecin produced by _____
 - a) Killer paramecium
 - b) dextral snail
 - c) Sensitive paramecium
 - d) sinistral snail.
- 4) Mendel choose garden pea as plant material for his experiments because _____
 - a) Well define characters.
 - b) Self-fertilization
 - c) Bisexual flowers
 - d) All of these.
- 5) Which of the following method is used for identification of successful recombination?
 - a) Transformation
 - b) Screening
 - c) Insertional Inactivation
 - d) None of these.
- 6) Haploid production through megaspores is called _____
 - a) Androgenesis
 - b) Gyanogenesis
 - c) Pollination
 - d) Gametogenesis
- 7) Which type of fusogen is used for protoplast fusion?
 - a) FDA
 - b) EMB
 - c) CFW
 - d) PEG
- 8) Parthogenesis is also known as _____
 - a) Epimixning
 - b) Embryogenesis
 - c) Apomixing
 - d) Androgenesis
- 9) Macerozyme derive from _____
 - a) Aspergillus
 - b) Penicillium
 - c) Rizopus
 - d) Trichoderma
- 10) Which of the following enzyme is not used in protoplast isolation?
 - a) Pectinase
 - b) Trypsin
 - c) Cellulase
 - d) Hemicellulase.

①

P.T.O

- Q.II** Answer the following questions in short. (Attempt any 10) [20]
- What do you understand by genotype and phenotype?
 - State the Mendel's first law.
 - What is Punnet square? Write the use of Punnet square.
 - Give the definition of recombinant DNA technology.
 - Define the terms 1) Back cross. 2) Cytoplasmic inheritance.
 - Write a brief note on replica plating.
 - Define embryogenetic potential.
 - Give the definition of meristem culture and its application in quarantine.
 - What is embryo culture?
 - Define osmoticum and give its examples.
 - Write the role of Driselase in protoplast isolation.
 - Define cybrid and somatic hybrid.
- Q.III** a) Give the statement of law of independence assortment and explain it. [05]
 b) What do you mean by maternal effect? Write a note on maternal effect in *Limnaea* peregra. [05]
- OR**
- Q.III** a) Give an account on extrachromosomal inheritance in *Mirabilis jalapa*. [05]
 b) What do you mean by dominance, and co-dominance? Explain it with an example. [05]
- Q.IV** a) Discuss in detail-steps involved in rDNA technology and its applications. [06]
 b) What are competent cells? Give the procedure for preparation of it. [04]
- OR**
- Q.IV** Give an account on screening methods for transforming cells. [10]
- Q.V** a) Explain the process of formation of embryo with its significance. [05]
 b) Explain in detail ovule culture. [05]
- OR**
- Q.V** a) Describe principle and method of ovary culture. [06]
 b) Write a short note on protocol of anther culture. [04]
- Q.VI** Define somatic hybridization. Explain induced fusion methods in detail. [10]
- OR**
- Q.VI** a) Write a note on protoplast isolation by enzymatic method. [05]
 b) Enlist techniques of protoplast culture and explain any three methods. [05]

