

SEAT No. _____

NO. OF PRINTED PAGES: 02

[16/A-13]

Sardar Patel University

B.Sc Biotechnology Fourth Semester

Monday, 9th April-2018

10:00 a.m to 01:00 p.m

US04CBIT02 (Applications of Biotechnology – II)

Total Marks: 70

Note: Figures to the right indicates marks.

Q.I Multiple Choice Questions

[10]

- 1) Mendel's experimental material was _____
 - a) Pisum sativum
 - b) Oryza sariva
 - c) Lathyrus odoratus
 - d) Mirabilis jalappa
- 2) Genotype is the _____
 - a) Genetic constitution.
 - b) Trait expressed
 - c) Genetic constitution of phenotype
 - d) Expressed genes.
- 3) Restriction enzymes cut DNA at _____
 - a) The sequence CTGGTC only
 - b) Specific at methylated sequence
 - c) A site specific for each enzyme
 - d) Sites that are ten bases apart.
- 4) In blue white selection white colonies prove the presence of _____
 - a) Recombinants
 - b) Mutants
 - c) Non recombinants
 - d) None of these.
- 5) The ovary culture is useful for _____
 - a) To study the early development of embryo
 - b) To study the fruit development
 - c) To study the fruit physiology
 - d) All of these.
- 6) Which of the following can be used to convert haploids into homozygous diploids?
 - a) Driselase
 - b) Colchicines
 - c) Sodium hypochlorite
 - d) None of these.
- 7) Artificial seed means artificial encapsulation of _____
 - a) Somatic embryo
 - b) Aggregates of cells/tissues
 - c) Shoot and bud
 - d) All of these.
- 8) The term protoplast was introduced by _____
 - a) Klercker in 1892
 - b) Razdan in 1996
 - c) Hanstein in 1880
 - d) Bhojwani in 1977.
- 9) The protoplast can be stained using _____
 - a) FDA
 - b) CFW
 - c) Both a and b.
 - d) None of these.
- 10) Cybrid provides _____
 - a) Transfer of plasmogenes
 - b) Sexually incompatible combination.
 - c) Production of wide variety of combinations.
 - d) All of these.

P.T.O

①

- Q.II Answer the following questions in short. (Attempt any 10) [20]**
- a) Why did Mendel choose pea plant for his experiment?
 - b) Define co-dominant and reciprocal cross.
 - c) Define allele and gene.
 - d) What is Insertional Inactivation?
 - e) What is plasmid inheritance?
 - f) Write full form of X-gal and IPTG.
 - g) Define embryogenesis.
 - h) Write the differences between somatic embryogenesis and organogenesis.
 - i) Enlist various applications of cybrid.
 - j) Define the terms: Feeder layer culture technique and Co-culturing technique.
 - k) Write a brief note on iodoacetate.
 - l) Write applications of embryo culture.

- Q.III a) Give the statement of Mendel's second law and explain it in detail. [05]**
b) Explain in detail kappa particle in paramecium. [05]

OR

- Q.III a) Explain incomplete dominance in detail [05]**
b) Write an account on coiling of shell in snail. [05]

- Q.IV a) What is rDNA technology? Explain the steps involved in it. [05]**
b) Write the method which is used for visual selection of microorganisms by antibiotics. [05]

OR

- Q.IV a) Define competent cells. How they are prepared and used? [06]**
b) Explain in detail blue white selection. [04]

- Q.V Write a descriptive note on anther and pollen culture with proper diagram. [10]**

OR

- Q.V a) Discuss in detail ovary culture and factors affecting it. [06]**
b) Discuss about somatic organogenesis. [04]

- Q.VI Discuss about the isolation and fusion of protoplast with mechanism of fusion, [10]**

OR

- Q.VI a) Define cybrids and write about various approaches used to achieve such fusion. [05]**
b) Write a short note on protoplast viability test [05]