

SEAT No. \_\_\_\_\_

No. of Printed Pages : 02

[60]

Sardar Patel University

Semester-IV

Saturday, 26<sup>th</sup> December 2020

US05CBIT-02

(Transgenic)

Time: 02:00 P.M to 04:00 P.M

Marks:70

- Q-1 Multiple Choice Question (attempt all)** **10**
1. An approach where cells and DNA are exposed to a very high voltage gradient resulting pores in the cell membrane through which DNA enter the cell is?
    - a) Microinjection
    - b) Electroporation
    - c) Gene gun
    - d) liposomes
  2. DNA is micro injected into fertilized egg ?
    - a) After fusion of male and female nuclei.
    - b) Before fusion of male and female nuclei
    - c) At the time of fusion of male and female nuclei
    - d) Any time
  3. Which of the following vectors are widely used in Human Genome Project.
    - a) Plasmid and cosmid
    - b) Lambda phage and M13
    - c) Phagemid and shuttle vectors
    - d) BAC and YAC
  4. RFLP involves?
    - a) Used to identify a specific protein
    - b) Used to identify a specific DNA
    - c) Used to identify RNA
    - d) Used to identify both DNA and RNA
  5. Which of the following expression allows the control of transgene expression?
    - a) Promoter
    - b) Inducer
    - c) Silencer
    - d) Reporter
  6. The first transgenic plant expressing engineered foreign genes were tobacco plants produced by the use of ?
    - a) *Agrobacterium tumefaciens*
    - b) *Bacillus thuringiensis*
    - c) *Arabidopsis thaliana*
    - d) *Streptomyces hygroscopicus*
  7. In transgenic selection Positive selection permits?
    - a) Permits only Homologous recombination
    - b) Permits both Homologous and non homologous recombination
    - c) Permits only Non Homologous recombination.
    - d) None of the above
  8. Liquid nitrogen is widely used material for cryopreservation because?
    - a) It is chemically inert
    - b) Non toxic
    - c) Non flammable
    - d) All of the above
  9. \_\_\_\_\_ gives Golden rice its characteristic yellow colour.
    - a) lutein
    - b) Phyotene
    - c)  $\beta$ -Carotene
    - d)  $\alpha$ -Carotene
  10. Which of the following cell is deficient of HGPRT enzyme?
    - a) Myeloma cells
    - c) B cell

(1)

(P.T.O.)

b) Hybrid cell

d) All of the above

Q-2

**Answer the following (Attempt all)**

08

1. Monoclonal antibody when used as enzyme is \_\_\_\_\_
2. Normal mice are used as model system to study genetic diseases. State True or False.
3. RAPD are generated by using \_\_\_\_\_ of ordinarily 10 bases long oligonucleotide.
4. AFLP is the technique used for the amplification of DNA fragment. State True or False.
5. tomatoes exhibiting delay ripening express antisense RNA against \_\_\_\_\_
6. Sucrose is used to improve tolerance to salt stress in transgenic plants. State true or false.
7. Scoreble markers are also called \_\_\_\_\_ gene.
8. The microinjection method facilitates direct nuclear delivery of exogenous DNA. State true or false.

Q-3

**Short Question (Attempt any ten)**

20

1. Why is mouse most preferred animal for gene transfer?
2. Why is HAT medium used for selection of monoclonal antibodies?
3. Give the characteristic of continuous cell lines.
4. What are edible vaccines?
5. Enlist various advantages of flavor savor tomato over normal tomatoes.
6. Define Germplasm.
7. What do you understand by microsatellite?
8. Give full form of the following:
  1. SND
  2. RAPD
  3. EST
  4. AFLP
9. Where and when was Human Genome Project initiated?
10. Define selectable and scrollable markers with one example each.
11. What is a liposome?
12. Give an account on retrovirus as gene transfer method.

Q-4

**Attempt any four of the following.**

32

1. Discuss various physical method for gene transfer.
2. Discuss scorable markers with suitable examples.
3. Give a detail account on Human Genome Project.
4. Discuss RAPD and RFLP as molecular marker.
5. Give a detail account on Golden rice.
6. Discuss necessary steps for Cryopreservation and its importance in germplasm.
7. Give the principle, diagram and steps to produce Monoclonal Antibodies by Hybridoma technology.
8. Discuss the process to create transgenic and Knock out mice.

—X—  
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