

Sardar Patel University
External Theory Examination M.Sc. (Integrated)
Biotechnology: Principle and Practices (PS05CIGB03) (Bio-Technology)

Friday, 21st October 2016

2:00 pm to 5:00 pm

SEM-V

Total Marks: 70

Note:

- 1) Attempt all the questions (including multiple choice questions) which are to be written in the provided answer book only.
- 2) Draw neat and labeled diagram wherever necessary.

Q.I

Multiple choice questions:

(08)

- 1 The bacterium used for gene transfer in plants is _____.
(a) E.coli (c) Azotobacter
(b) Rhizobium (d) Agrobacterium
- 2 In plant tissue culture lab air should pass through _____.
(a) laminar air flow (c) Exhaust fan
(b) HEPA filter (d) Windows
- 3 Chemical oligonucleotide synthesis occurs in
(a) 5' to 3' direction (c) Both directions
(b) 3' to 5' direction (d) None
- 4 Contact inhibition is lacking in _____.
(a) Memory cell (c) Cancer cell
(b) Spleen cell (d) All of these
- 5 The possibility of introducing correct version of defective gene in all cells of individual is achieved by _____.
(a) Germ line therapy (c) Corrective gene therapy
(b) Somatic cell therapy (d) Gene augmentation therapy
- 6 To create bacteria that produce human insulin, scientist insert the human gene of interest into the bacteria _____.
(a) Circular chromosome (c) Cell wall
(b) Plasmid (d) Cell membrane
- 7 Bacillus thuringensis produce toxins which can kill _____.
(a) Human (c) Insect
(b) Animals (d) Human and animals
- 8 Which of the following has maximum transplantation success rate?
(a) Autograft (c) Xenograft
(b) Allograft (d) Syngenic graft

Q.II Answer the following (Any seven) (14)

1. What is centrifugation?
2. Enlist the three operational stages of industrial biotechnology process.
3. List out basic requirement of plant tissue culture laboratory.
4. What is continuous cell line?
5. Write the applications of DNA chip.
6. What is Xenotransplantation?
7. What is human mouse?
8. Define Transgenesis and transgene.
9. What were the goals of Human Genome Project?

Q.III (a) Explain the general protocol for the isolation of DNA from Plant. (06)
(b) Why E.coli considered as an ideal model organism? (06)

OR

(b) Write a note on cell fractionation techniques. (06)

Q.IV (a) Describe with the help of Flow chart: chemical synthesis of nucleic acid. (06)
(b) Describe DNA chip technology. (06)

OR

(b) Explain the importance of bioinformatics in biotechnology. (06)

Q.V (a) What is immobilization of enzyme? Explain immobilization by entrapment method. (06)
(b) What is gene therapy? Explain types of gene therapy. (06)

OR

(b) Explain hybridoma technique. (06)

Q.VI (a) Explain with diagram microinjection method of gene transfer in mice. (06)
(b) With the help of example explain: How insect resistance plants can be created? (06)

OR

(b) What is bioremediation? Explain types of bioremediation. (06)

← X →
②