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SEAT No. _____

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Sardar Patel University
Semester examination-2019

B.Sc- VIth Semester,
Course no. US06CBNF04,
Time – 3hrs (10AM-1PM)

Subject – Genetic Engineering-II
Date - 01.04.19, Monday
Marks-70

NOTE- Figure in the right indicates marks
All questions are compulsory. Make necessary diagram wherever needed.

Q.1. Multiple Choice Question (MCQ). Select correct answer from given MCQ. (10marks)

- 1.a. Which of the following is example of membrane hybridization
(A) Southern hybridization (B) Western hybridization
(C) Northern hybridization (D) All of the above
- 1.b. End labeling is process used for preparation of
(A) Probes (B) Sequencing
(C) Markers (D) Foot printing
- 1.c. Southern blotting can be used for study of
(A) Protein-Protein interaction (B) DNA-Protein interaction
(C) DNA-RNA interaction (D) DNA-DNA interaction
- 1.d. AFLP stands for
(A) Allelic fragment length polymorphism (B) Amplified fragment length polymorphism
(C) Amplified false length palindrome (D) Automated false length palindrome
- 1.e. RFPLs, SSR , AFLPs are examples of
(A) Molecular markers (B) Biochemical markers
(C) Morphological markers (D) Selectable markers
- 1.f. 11-60 bp is length of-
(A) Microsatellite DNA (B) Minisatellite DNA
(C) Palindromic DNA (D) Telomeric DNA
- 1.g. Particle bombardment method is
(A) Chemical method of gene transfer (B) Physical method of gene transfer
(C) Biological method of gene transfer (D) All of the above
- 1.h Which of the following techniques can be used for treatment of hereditary diseases-
(A) Chemo therapy (B) Gene therapy
(C) Radiation therapy (D) Passive immunity
- 1.i. Cell that has ability to differentiate into all types of cells are called
(A) Stem cell (B) NK Cell (C) Somatic cell (D) Cancer cell
- 1.j. Site directed mutagenesis is techniques that can used for
(A) Protein engineering (B) Protein folding
(C) Protein degradation (D) Protein splicing.

P.T.O

Q.2. Short questions (2 marks each) attempt any ten (2x10=20marks)

- [1] What is non radioactive probes?
- [2] Write note on application of Western hybridization.
- [3] Enlist different application of Autoradiography.
- [4] What should be ideal properties of any Molecular Markers?
- [5] Write brief notes on application of DNA fingerprinting in forensic science.
- [6] How SNPs markers can be detected?
- [7] Define the term transgenic.
- [8] How gene can be transfer through Ca⁺⁺ Phosphate mediated method?
- [9] What is Gene gun techniques?
- [10] Write brief notes on application of stem cell.
- [11] Enlist application of site directed mutagenesis techniques.
- [12] Define gene therapy.

Q3.a How can you transfer DNA from agarose gel to membrane? Explain. [5]

Q3.b. What is Primer extension method? Explain. [5]

OR

Q.3.a. Explain the process of Northern blotting with neat diagram. [5]

Q.3.b. How will you prepare DNA probes through nick translation? Explain. [5]

Q.4.a. Discuss RFLP techniques in detail. [5]

Q.4.b. Write notes on SSR markers and their application. [5]

OR

Q.4.a. Explain the process of AFLPs with advantage and limitation. [5]

Q.4.b. Write notes on repetitive EST markers. [5]

Q.5.a Describe the method of electroporation techniques. [5]

Q.5.b. Write short notes on application of transgenic animals [5]

OR

Q.5.a. How will you transfer a gene X through Microinjection? Explain. [5]

Q.5.b. Write detail notes on liposomes. [5]

Q.6.a. How gene therapy techniques done for SCID? Explain. [6]

Q.6.b. Enlist and explain the unique properties of embryonic stem cell. [4]

OR

Q.6.a. Discuss vector mediated method of site directed mutagenesis. [6]

Q.6.b. Explain the strategy of germ line gene therapy. [4]

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