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(37) SEAT No._____ No. of Printed Pages : 2

Sardar Patel University
Semester examination-2018
B.Sc VIth Semester, Subject – Genetic Engineering-II
Course no. US06CBNF04, Date - 02.04.18, Monday

Time – 3hrs, 10.00 AM to 01.00 PM **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. RNA-RNA interaction is examples of
(A) Southern blotting (B) Western blotting
(C) Northern blotting (D) All of the above

1.b A DNA or RNA sequence which are labeled with radioactive substances and can be used for hybridization reactions are called
(A) Adaptor (B) Probe (C) Linker (D) Primer

1.c. Western 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. RFLP stands for
(A) Restriction fragment length polymorphism (B) Rapid fragment length Poly allele
(C) Restriction false length palindrome (D) Rapid false length palindrome

1.e. Which of the following techniques are PCR based markers
(A) SSR (B) RAPD
(C) AFLP (D) All of the above

1.f. Length of microsatellite range in between-
(A) 11-60bp (B) 60-100bp (C) 100-200bp (D) 200-1000bp

1.g. Electroporation is examples of
(A) Vector of gene transfer (B) Physical method of gene transfer
(C) Chemical of gene transfer (D) Biochemical of gene transfer

1..h. BT cotton is examples of
(A) Transgenic plants (B) Transgenic animals
(C) Hybrid plants (D) Hybrid animals.

1.i. Pluripotency is characteristic features-
(A) Stem cell (B) Neural cell (C) Fibroblast (D) Muscular cell

1.j. Which of the following techniques can be used for protein engineering
(A) Site directed mutagenesis (B) Gene therapy
(C) Antisense RNA technology (D) DNA footprinting.

P.T.O

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

[1] What is nucleic acid hybridization?
[2] Enlist various application of Northern blotting.
[3] Define Autoradiography.
[4] Enlist the properties of ideal Molecular Markers.
[5] What do you understand by SNP?
[6] Write short notes EST markers.
[7] Write brief notes on liposomes.
[8] Give the application of transgenic animals.
[9] What do you mean by gene transfer system?
[10] What is stem cell?
[11] Define site directed mutagenesis.
[12] Why gene therapy is important ?

Q3.a Describe the process of Western blotting with neat diagram. [5]
Q3.b.What is nick translation? Explain with neat diagram. [5]

OR

Q.3.a. Explain the process of Southern blotting with neat diagram. [5]
Q.3.b. How will you prepare RNA probes for hybridization? Explain. [5]

Q.4.a. How AFLP is used as Molecular marker? Explain. [5]
Q.4.b. Write short notes on RAPD markers. [5]

OR

Q.4.a. Explain the process of DNA fingerprinting with any examples. [5]
Q.4.b. Write notes on repetitive DNA markers. [5]

Q.5.a How will you transfer gene through Microinjection? Explain. [5]
Q.5.b. Write short notes on application of transgenic Plants. [5]

OR

Q.5.a. How will you transfer a gene X through Particle bombardment method? Explain. [5]
Q.5.b. Describe the strategy of gene transfer through retrovirus. [5]

Q.6.a. Give the salient features and properties of stem cell. [5]
Q.6.a. Discuss the process of somatic cell gene therapy with examples. [5]

OR

Q.6.a. Enlist methods of site directed mutagenesis and explain any method in detail. [5]
Q.6.a. Discuss the process of antisense gene therapy with examples. [5]