(A-7) Seat No: _____ No. of Printed Pages: 02

SARDAR PATEL UNIVERSITY
M.Sc. Integrated Biotechnology
6th Semester Examination [ATKT]
Wednesday, 19th October, 2016
10:00a.m. to 01:00p.m.
PS06CIGB02: Genetic Engineering

Total Marks: 70

Note:(i) Figures to right indicate marks.
(ii) All questions are compulsory.

Q.1 **Choose the most appropriate alternative for the following: (All are compulsory)** [8]

1. pBR322 does not having _____ .
   a. nic-bom site b. Antibiotic resistant marker c. MCS d. Restriction sites
2. _____ particles are utilized to insert DNA through biolistic.
   a. Silver b. Gold c. Lead d. Uranium
3. cDNA is having _____ sequences.
   a. sense b. antisense c. both sense & antisense d. none of the
4. Biotinylation is _____ based method of probe detection.
   a. radioactive b. fluorescence c. chemi-luminescence d. enzymatic reaction
5. _____membrane required vacuum oven to fix transferred nucleic acid for probe hybridization.
   a. Nitro cellulose b. Nylon c. None of the d. All the
6. Subcloning involves _____ from one vector to another vector.
   a. gene mutation b. gene deletion c. gene exchange d. gene transfer
7. _____ sequence is responsible to express the gene on vector..
   a. Promoter b. Marker c. Ori d. Lac I
8. _____ is required to purify expressed transgenic protein from cell lysate.
   a. Fusion protein b. Transgenic protein c. RNAi protein d. Protease enzyme

Q.2 **Attempt <u>any seven</u> of the following:** [14]

1. Which are the different qualities of ideal vector?
2. Briefly discuss biolistic method of transformation.
3. What do you mean by cDNA? Give significance of use of cDNA in gene cloning.
4. Give concept of integration of DNA insert by homopolymer tailing.
5. Write method and application for plaque hybridization.
6. What do you mean by Southern and Western blotting?
7. Define promoters. Give difference between specific and universal promoters.
8. Which kind of regulations should be kept for release of GMOs?
9. Give concept of subcloning.

(P.T.O.)

Q.3	A.	Describe phagmid vectors with its significance.	[6]
	B.	Explain *Agrobacterium* mediated transformation in detail.	[6]
		OR	
	B.	Write a note on YAC vector.	[6]
Q.4	A.	Describe Maniatis method of cDNA library construction and its limitations.	[6]
	B.	Explain hybridization based screening methods of genomic library.	[6]
		OR	
	B.	Write a note on Okayama and Berg method with diagram.	[6]
Q.5	A.	Give a detail account of *in situ* Chromosomal hybridization.	[6]
	B.	Describe different methods of probe preparation in brief.	[6]
		OR	
	B.	Explain Chromosomal walking.	[6]
Q.6	A.	Write a note on Nested deletion.	[6]
	B.	Explain any two techniques for purification of recombinant proteins.	[6]
		OR	
	B.	Describe site directed mutagenesis.	[6]

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