

Total No. of Questions :5]

SEAT No. :

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P731

[5117] - 403

T.Y.B.Sc.

BIOTECHNOLOGY

Bb-343: Recombinant DNA Technology

(2013 Pattern) (Semester - IV)

Time : 3 Hours]

[Max. Marks :80

Instructions to the candidates:

- 1) All questions are compulsory.*
- 2) Draw neat and labelled diagrams wherever necessary.*
- 3) Figures to the right indicate full marks.*

Q1) Answer the following in 2-4 lines:

[20]

- a) Mention the contribution fo Boliver & Rodrigues in the field of genetic engineering.
- b) What is the activity of alkaline phosphatase?
- c) Mention any 2 properties of vectors used for cloning large DNA molecules.
- d) What are linkers?
- e) Enlist any 4 safety precautions in RDT.
- f) Describe how UV spectrophotometry helps in determining purity of nucleic acids.
- g) Write any four applications of genetic engineering.
- h) Explain the use of biotin- streptaridin in RDT.
- i) Why are S1 nucleases used as molecular tools in RDT.
- j) What are universal primers?

P.T.O.

Q2) Write short notes on (Any 3): **[3×5=15]**

- a) Structure and application of PVC.
- b) Two methods of selection of transformants.
- c) Strategy to avoid protein contamination while isolating plasmid DNA.
- d) DNA finger printing.

Q3) Write short notes on (Any 3): **[3×5=15]**

- a) Expression vectors.
- b) Different nucleases in RDT.
- c) Structure of UTP & dTTP (draw the structure)
- d) cDNA library.

Q4) a) Describe various methods used for transformation of plant cells. [7]

- b) Comment on different types of restriction enzymes & their roles in genetic engineering. **[8]**

OR

a) Write a note on 'RNA as a tool in RDT'. **[7]**

b) Explain in detail the method of Southern Hybridization. **[8]**

Q5) a) Give a comparative account of different DNA sequencing methods.[15]

OR

b) Give a detailed account of RT-PCR. Add a note on various factors governing the amplification in RT-PCR. **[15]**

