Total No. of Questions : 4]

SEAT No. : ☐

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T.Y.B.Sc. (Vocational)

INDUSTRIAL MICROBIOLOGY

VOC - IND - MIC - 345 (Theory Course)

Molecular Biology and Recombinant DNA Technology

(Semester - IV) (2013 Pattern)

Time : 2 Hours]   *[Max. Marks :40*

Instructions to the candidates:

   1)   *All questions are compulsory.*

   2)   *All questions carry equal marks.*

   3)   *Draw neat labeled diagrams wherever necessary.*

Q1) Answer the following   **[10]**

  a)   What is Human Genome Project?

  b)   Maximum Size of DNA that can be inserted in YAC vector is _____.

  c)   Which enzyme is used to cut DNA molecule in Recombinant DNA Technology?

  d)   DNA fingerprinting was developed by _____

  e)   Name any two examples of monoclonal antibodies produced by RDT.

  f)   What is Recombinant DNA Technology?

  g)   According to HGP genetic similarity between all humans is _____ percent.

  h)   What do you understand by colony PCR?

  i)   What is a minisatellite DNA?

  j)   Draw the structure of ddNTP.

P.T.O.

Q2) Attempt <u>any two</u> of the following :   **[10]**

    a)   Diagrammatically explain Real time PCR.

    b)   Comment on the role of nucleic acid hybridization in screening of desired clone. Give types of nucleic acid probes used in RDT.

    c)   What is Sangers method of sequencing? Write the principle and methodology.

Q3) Comment on : (<u>Any two</u> of the following)   **[10]**

    a)   YAC as a vector

    b)   Blue - White screening.

    c)   Transgenic animals.

Q4) Attempt <u>any one</u> of the following :   **[10]**

    a)   What is site - directed mutagenesis? Discuss any two methods of inducing point mutations and its applications.

    b)   Explain in detail the steps involved in cloning a desired gene. Draw diagrams wherever necessary.

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