2016

BIOTECHNOLOGY

PAPER : BIT 203

GENETIC ENGINEERING

(Old Course)

Full Mark : 80

Time : 3 Hrs

Figures in the right hand margin indicate full marks for the question

All questions are compulsory

1. Answer the following: 1x8=8

   (i) What are linkers and adaptors?

   (ii) Name a flurescent dye.

   (iii) What are lambda vectors?

   (iv) Define expression cloning?

   (v) Name a genetically modified organism.

   (vi) What are ESTs?

   (vii) What are DNA chips?

   (viii) What is FISH?

2. Write short answers for the following: 2x6=12

   a) Name two end –modificatio enzymes.

   b) What is nick translation?

   c) What are cosmids?

P.T.O.

d) What are Restriction endonucleases? What are its types?

e) What are ribozymes? Give example.

f) What is chromosome–walking?

3. What are YACs? Describe the characteristic features and structure of a YAC. 5

4. Briefly explain the technique of blue-white screening and its utility in molecular biology. 5

5. What is contig assembly? Write its significance. 5

6. Desribe briefly the process of Pulsed Field Gel Electrophoresis, and how does it help in molecular biology research. 5

7. Write short notes on any two: 8x2=16

a) Southern Hybridization.

b) Physical & Genetic Mapping.

c) Yeast two-hybrid system.

8. Answer any two from the following : 12x2=24

a) What are fusion proteins? Describe the protein purification system using a GST-tag and His-tag. 2+10=12

b) What are cloning vectors? Write an account on the various vectors available for DNA cloning. 4+8=12

c) Describe Maxam and Gilbert's chemical Degradation method of DNA sequencing. 12

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