13. Write notes on:

(a) Molecular probes

(b) cDNA Synthesis

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(20518) Roll No. 0172356444

M.Sc. (Biotechnology)- II Sem.

NP-3337

M.Sc.(Biotechnology) Examination, May-2018

Recombinant DNA Technology and Genetic Engineering

(H-204)

[M.Sc. (Bio-Tech.)]

Time : Three Hours] *[Maximum Marks : 50*

Note : Attempt questions from **all** Sections as per instructions. Give answer with well labelled figure.

Section-A

(Very Short Answer Questions)

Note : Attempt all the **five** questions. Each carries 2 marks. 2×5=10

1. What are modifying enzymes? Name any two.

2. Differentiate between binary and shuttle vectors. give examples.
3. Write the significance of southern blotting in genetic engineering.
4. Which enzyme is specifically used in PCR and why?
5. How is cDNA beneficial over genomic DNA? give reason.

Section-B

(Short Answer Questions)

Note : Attempt any **two** questions out of the following **three** questions. Each question carries 5 marks. 5×2=10

6. How has Genetic Engineering proved revolutionary in 21st Century? Give its significance.
7. What are Expression vectors? Explain with examples.

8. Briefly describe the steps in chromosome walking. How is it different from chromosome jumping?

Section-C

(Detailed Answer Questions)

Note : Attempt any **three** questions out of the following **five** questions. Each question carries 10 marks. 10x3=30

9. Describe and compare the two main techniques of DNA sequencing. give their significance.
10. How would you design a primer for PCR? Describe RT-PCR and give its applications.
11. Discuss the techniques involved in DNA finger printing. Also give its applications.
12. What are vectors? Discuss the properties of a good vector. how is a cloning vector different from an expression vector? Explain with examples.

13. What is gene sequencing? Discuss the Sanger's dideoxynucleotide synthetic method in detail.

N

(20517) Roll No. 1693532O2

M.Sc. (Biotech.)-II Sem.

NP-3337

M. Sc. (Biotechnology) Examination, May 2017

Recombinant DNA Technology & Genetic Engineering

(H-204)

[M.Sc.(Biotech.)]

Time : Three Hours] *[Maximum Marks : 50*

Note : Attempt questions from all Sections as per instructions.

Section-A

(Very Short Answer Questions)

Attempt all the *five* question. Each question carries 2 marks. Answer should be written 50–75 words. 2×5=10

Write short notes on the following :

1. BAC vectors.

2. Transfection.

3. Properties of M_{13}.

4. Real time PCR.

5. Promotor sequences.

Section-B

(Short Answer Questions)

Attempt any *two* questions. Each question carries 5 marks. Answer should not exceed 200 words. 5×2=10

6. Write detailed note on DNA fingerprinting.

7. What is chromosome walking? Discuss the applications of this technique in genome sequencing.

8. Discuss in brief the hazards of genetic engineering.

Section-C

(Detailed Answer Questions)

Attempt any *three* questions. Each question carries 10 marks. Answer must be descriptive. 10×3=30

9. What is polymerase chain reaction? Discuss the applications of polymerase chain reaction (PCR) in basic and applied research.

10. What are molecular probes? How can these be prepared? Discuss their applications in modern research.

11. What are different kinds of vector used for gene cloning? How do plasmid vector differ from phage in their structure and utility?

12. Write detailed notes on the following : 5 each

(i) Genomic and cDNA libraries

(ii) Recombinant DNA technology and molecular farming.

(12)

V

(20516) Roll No. 1S835.02512

M. Sc. (Biotech.)-II Sem.

NP-3337

M. Sc. (Biotech.) Examination, May 2016

RECOMBINANT DNA TECHNOLOGY & GENETIC ENGINEERING

(H-204)

(M.Sc. Biotech.)

Time : Three Hours] *[Maximum Marks : 50*

Note : Attempt questions from all the Sections as per instructions.

Section-A

(Very Short Answer Questions)

Attempt all the *five* questions. Each question carries 2 marks. Very short answer is required not exceeding 75 words. 2×5=10

Write in brief about :

1. RT-PCR.

2. How is recombinant DNA made ?

3. Essential features of a vector.

4. Molecular probes.

5. Gene cartridges.

Section-B

(Short Answer Questions)

Attempt any *two* questions from this Section. Each question carries 5 marks. Short answer is required not exceeding 200 words. 5×2=10

6. Write detailed note on southern blotting technique.

7. What is chromosome walking ? When it is used.

8. Write in brief about recombinant DNA technology and its applications in medicine.

Section-C

(Detailed Answer Questions)

Attempt any *three* questions from this Section. Each questions carries 10 marks. Answer is required in detail. 10×3=30

9. What are restriction enzymes ? Why are they so important for recombinant DNA technology ?

10. What are plasmids ? How do they work as cloning vector ?

11. Write detailed note on the following :
    (i) RT-PCR and its applications
    (ii) Recombinant DNA technology and its applications in agriculture.

12. What is gene sequencing ? Describe in detail the method of Maxam and Gilbert chemical degradation.

13. What is genetic engineering ? Discuss some areas of benefit from genetic engineering.