9. What is human genome project? When was it started and when it was completed? What are the salient features of this project? 15

10. What is synthetic biology? How synthetic cells are created? What are applications of artificial cells? 15

N (Printed Pages 4)

(20517) Roll No. 9352034

B.Sc. (Bio-Tech.)-III Yr.

NS-3481

B.Sc. Bio-Technology Examination, May 2017

Recent Trends in Bio-Technology

(B-309)

(New)

Time : Three Hours] *[Maximum Marks : 75*

Note : Attempt **any 5** questions.

1. (i) What are microarrays? What are they used for? 5×3=15

(ii) What are the main technologies used in microarrays?

(iii) What are the advantages and disadvantages of each such technology?

2. (i) What is chloroplast engineering? Describe the method of engineering chloroplasts in detail. 10

(ii) How drought resistant and herbiside resistant crops can be produced by chloroplast engineering. 5

3. (i) Define antisense RNA. What is significance of this method in gene therapy? 5

(ii) What is the difference between antisense technology and RNAi technology for the knock down the expression of a gene? 10

4. Write a note on the following : 5×3=15

(i) Terminator technology

(ii) Edible vaccines

(iii) Shuttle vectors

5. (i) What is a terminator seed? What was the name of company that made the terminator? Do GMO plants have seeds? 10

(ii) What are the advantages and disadvantages of terminator seed technology? 5

6. (i) What is cryogenics and vitrification? 5

(ii) What are cryoprotectants? How do they work? Give few exmples? 10

7. What is bilogical nitrogen fixation? How does nitrogen fixation happen? Discuss in detail. 15

8. (i) Differentiate between ploymer and Biopolymers. 5

(ii) Name various types Biopolymers 5

(iii) What are different uses of biopolymers? 5

(20518) Roll No. 1579350266

B. Sc. (Biotech.)-III Year

NS-3481

B. Sc. (Biotechnology) Examination, May 2018

Recent Trends in Biotechnology

(B-309)

(New)

Time : Three Hours] *[Maximum Marks : 75*

Note : Answer any *Five* questions. All questions carry equal marks.

1. What is Chloroplast engineering ? Discuss this process in detail. 15

2. What are the therapeutic proteins ? Explain them with suitable examples. 15

3. Write short notes on the following : 7½×2=15

(a) DNA Chips

(b) Human Genome Project.

4. Describe cryopreservation. How is it used in transport of germplasm ? 15

5. Write short notes on the following : 7½×2=15

(a) Biopesticides

(b) Applications of Antisense RNA Technology.

6. How biotechnology is useful for biofuel production ? Discuss in detail. 15

7. Write short notes on the following : 7½×2=15

(a) Biotechnology of N_2 fixation

(b) Edible vaccines.

8. Describe the use of Biopolysaccharides (Xanthum gum) in the field of Biotechnology. 15

9. Write short notes on the following : 7½×2=15

(a) Arabidopsis as model plant in genetic engineering

(b) Cassette vectors.

10. Write notes on the following : 7½×2=15

(a) Terminator Seed Technology

(b) Synthetic Cell.

A (Printed Pages 2)

(20620) Roll No. .....

B.Sc. (Biotech.)-III Year

NS-3481 (CV)

B.Sc. (Biotechnology) Examination, June-2020

Recent Trends in Biotechnology

(B-309)

Time : Two Hours] *[Maximum Marks : 75*

Note : Answer any **four** questions. **All** questions carry equal marks.

1. Describe the Biopolymers (β-hydroxy butyrate) in the field of biotechnology?
2. Write short notes on the following:
   (i) DNA Chips
   (ii) Therapeutic proteins
3. Define Biopesticides, and their types?
4. How do "M-Cells" facilitate the activity of edible vaccines?

P.T.O.

5. What are the typical steps to following during comparative analysis of chloroplast genomes?

6. What is the bovine embryo cryopreservation?

7. Which morphological, physiological, biochemical traits can analyse for N_2 fixation?

8. Write short notes on the following :

   (i) Seed Storage proteins

   (ii) Chloroplast Engineering

9. What is the relationship between microbiology and membrane technology for biofuel production?

10. Write short notes on the following:

    (i) Arabidopsis as model plant in genetic engineering?

    (ii) Synthetic cell