KERALA AGRICULTURAL UNIVERSITY
B.Tech.(Food Technology) 2021 Admission
IV Semester Final Examination – August 2023

Pafe.2221 **Food Biotechnology (2+1)** **Marks: 50**
Time: 2 hours

I **Fill in the blanks** **(10x1=10)**

1. Identification of specific DNA sequences in bacterial colonies is carried out using .....
2. Internal cuts in a DNA molecule is carried out using .....
3. cDNA can be prepared/synthesised using ..... enzyme.
4. Terminal phosphate groups in the DNA are removed using.....
5. Golden rice is an example of .....
6. Immobilization of enzymes .....its catalytic efficiency.
7. Taq Polymerase is produced by..... bacterium.
8. Reporters are used to identify .....
9. DNA fragments separated on agarose gel can be visualised using.....
10. ..... is the advanced gene editing technology.

II **Write short notes on ANY FIVE of the following** **(5x2=10)**

1. Mention the uses of biosensor.
2. Name the methods of enzyme immobilization.
3. What is a copyright?
4. Explain geographical indication with an example.
5. What is the genetic code?
6. What are the Okazaki fragments? Draw the diagram?
7. Give a special emphasis about the GMO Act of 2004.

III **Answer ANY FIVE of the following** **(5x4=20)**

1. What is enzyme immobilization and what are the various types of matrices useful for enzyme immobilization?
2. List the differences in the regulation of gene expression between prokaryotes and Eukaryotes.
3. Differentiate between cloning and expression vectors.
4. What are the steps in DNA isolation from a Gram positive bacteria?
5. Explain how Southern Blotting is performed.
6. What is colony hybridization? Draw a neat diagram depicting colony hybridization.
7. What are plasmids and draw the structure of pBR322?

IV **Write an essay on ANY ONE of the following** **(1x10=10)**

1. What are biosensors and describe different types of biosensors?
2. What is recombinant DNA technology and explain the steps taking Insulin as an example? Draw an illustration.

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