

MODEL QUESTION PAPER - 1
BIOLOGY FOR ENGINEERS 21BE45
MODULE - 1

1. a. Highlighting the properties of cellulose, justify cellulose as an effective water filter. 10
b. Write a short note on i. PHA ii Whey proteins 10
OR
2. a. With an example explain the development of DNA vaccines. 10
b. Explain the applications of enzymes in biosensors and Bio- bleaching 10

MODULE - 2

3. a. Brain functions as a CPU system. Justify 10
b. What is electroencephalogram? Discuss the various applications of electroencephalogram. 10
OR
4. a. What are stents? Give an account on the stent design and materials used for the manufacturer of stents. 10
b. Give an account on the characteristics and features of cataract 10

MODULE - 3

5. a. Lungs are an effective purification system. Justify the statement highlighting the functioning of the lungs. 10
b. Write a short note on
I. chronic obstructive pulmonary disease ii. Muscular dystrophy 10
OR
6. a. What is spirometry? Discuss the types and functioning of the spirometry. 10
b. With a neat labeled diagram, explain the mechanism of filtration by the nephrons. 10

MODULE - 4

7. a. What is echolocation? Discuss the application of echolocation in ultrasonography. 10
b. Explain the experiment conducted by Prof, Dickman and colleagues on GPS systems existing in pigeons 10
OR
8. a. What is a lotus leaf effect? Explain the mechanism and applications of lotus leaf effect. 10
b. The structure and design of the Kingfisher's beak led to the design of the bullet trains. Explain. 10

MODULE - 5

9. a. What is Bioprinting? Discuss the process and applications of bioprinting 10
b. What is DNA origami? Explain the process of DNA origami 10
OR
10. a. Give an account on the process involved in the self-healing bio concrete. 10
b. What is Bioremediation? Explain the various types of bioremediation. 10