

B.M.S. College of Engineering, Bengaluru-560019

Autonomous Institute Affiliated to VTU

September / October 2023 Supplementary Examinations

Programme: B.E.

Branch: CIVIL ENGINEERING

Course Code: 21CV7BSBFE

Course: Biology for Engineers

Semester: VII

Duration: 3 hrs.

Max Marks: 100

Instructions: 1. Answer any FIVE full questions, choosing one full question from each unit.
2. Missing data if any, may be suitably assumed.

UNIT - I

- 1 a) With a neat and labeled diagram explain the structure of an eukaryotic cell. **05**
- b) Give the classification of carbohydrates with examples. **05**
- c) Differentiate between primary, secondary and tertiary structure of proteins. **06**
- d) List the fat soluble vitamins and give their significances. **04**

OR

- 2 a) Explain the structure of a gene. **05**
- b) What are phospholipids? Mention their significance. **05**
- c) List the importance of enzymes in biology. **05**
- d) Differentiate between homopolysaccharide and heteropolysaccharide with examples. **05**

UNIT - II

- 3 a) Define active site of an enzyme. Explain the lock and key and induced fit hypothesis. **10**
- b) Distinguish the different types of reversible inhibitors. **10**

UNIT - III

- 4 a) What is immunity? Explain innate and adaptive immunity. **06**
- b) Write the structure of Ig A and Ig G and give their biological applications. **10**
- c) Discuss about T Cells. **04**

UNIT - IV

- 5 a) What are the different types of nanomaterials? Explain in detail. **10**
- b) List the applications and tools used in Bioinformatics. **10**

Important Note: Completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages. Revealing of identification, appeal to evaluator will be treated as malpractice.

UNIT - V

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|---|--|----|
| 6 | a) What are the principles of Biomechanics? | 06 |
| | b) List the major applications of genetic engineering. | 07 |
| | c) What are stem cells? Mention their applications. | 07 |

OR

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| 7 | a) Elaborate on the components of a neural network system. | 06 |
| | b) Write a short note on GMO. | 07 |
| | c) Describe the molecular basis for inheritance. | 07 |

SUPPLEMENTARY EXAMS 2023