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

Autonomous Institute Affiliated to VTU

## February / March 2023 Semester End Main Examinations

**Programme: B.E.**

**Semester: VII**

**Branch: ES CLUSTER (ET/EC/ML/EE/EI)**

**Duration: 3 hrs.**

**Course Code: 19ES7BSBFE**

**Max Marks: 100**

**Course: Biology for Engineers**

**Date: 04.03.2023**

**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) 'Biology is the science of life.' Justify the statement. | 10 |
|   | b) Briefly explain the theories of evolution of life.       | 05 |
|   | c) Explain evolutionary adaptation with an example.         | 05 |

### UNIT - II

- |   |  |    |
|---|--|----|
| 2 | a) Explain the types and functions of carbohydrates.                   | 10 |
|   | b) With a neat diagram explain the structure of a Biological Membrane. | 05 |
|   | c) Illustrate the importance of cell reproduction.                     | 05 |

### OR

- |   |   |    |
|---|---|----|
| 3 | a) Explain the structure of a eukaryotic cell. Also, mention the functions. | 10 |
|   | b) Describe the classifications of lipids.                                  | 05 |
|   | c) Write the differences between DNA and RNA.                               | 05 |

### UNIT - III

- |   |   |    |
|---|---|----|
| 4 | a) Distinguish the types of radiations on the basis of ionizing property. Also, explain their biological effects. | 10 |
|   | b) What are X – rays? Describe the medical use of X – rays.   | 05 |
|   | c) Discuss the penetrating power of different types of radiations.  | 05 |

### UNIT - IV

- |   |   |    |
|---|---|----|
| 5 | a) Arrange the radiosensitive organs in descending order and explain the reasons for the order. | 10 |
|   | b) Differentiate between deterministic effect and stochastic effect.                            | 05 |
|   | c) Write a note on hazards of cell phone radiations.  | 05 |

**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**

- 6 a) Explain the history and advantages of organic farming. **10**
- b) Explain the effects of nitrogen on plant growth and quality. Also explain the effects of its deficiency. **10**

**OR**

- 7 a) Explain the effects of phosphorous on plant growth and quality. Also explain the effects of its deficiency. **10**
- b) Explain the effects of potassium on plant growth and quality. Also explain the effects of its deficiency. **10**

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