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

**Autonomous Institute Affiliated to VTU**

## January 2024 Semester End Main Examinations

**Programme: B.E.** **Semester: VII**
**Branch: ES Cluster (EEE/ET/ECE/EIE/MD)** **Duration: 3 hrs.**
**Course Code: 19ES7BSBFE** **Max Marks: 100**
**Course: Biology for Engineers**

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



**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 - I | *CO* | *PO* | Marks |
|---|---|---|---|---|---|
| 1 | a) | List all the characteristics of living thing or organism supporting life. | CO1 | - | **05** |
| | b) | Define genetic drift. What are the different types of genetic drifts observed in nature? Explain with neat diagram, the genetic drift when a catastrophe destroys a large portion of population | CO2 | PO1 | **08** |
| | c) | What is taxonomy? Give reason for the importance of conducting studies on taxonomy. Explain Linnaean system of classification with an example. | CO2 | PO1 | **07** |
| | | **UNIT - II** | | | |
| 2 | a) | List the classification of lipids. | CO2 | PO1 | **05** |
| | b) | List the differences between prokaryotic and eukaryotic cells. | CO1 | - | **05** |
| | c) | With neat diagrams, explain the Eukaryotic Cell reproduction process. | CO2 | PO1 | **10** |
| | | **OR** | | | |
| 3 | a) | With a neat diagram, explain the structure of biological membrane. Also, briefly describe the various techniques for membrane-controlled transport of substances. | CO2 | PO1 | **10** |
| | b) | Differentiate between DNA and RNA. | CO1 | - | **05** |
| | c) | With a neat diagram, explain the structure Eukaryotic Cell | CO2 | PO1 | **05** |
| | | **UNIT - III** | | | |
| 4 | a) | How are X-rays generated? Describe with a neat diagram. | CO3 | PO6 | **06** |
| | b) | Explain penetrating power of radiations w.r.t various substances and within a human body with necessary diagrams. | CO3 | PO6 | **10** |
| | c) | Classify different types of radiations. | CO3 | PO6 | **04** |

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| | | | **UNIT - IV** | | | |
| | 5 | a) | Illustrate deterministic and stochastic effect on human body when exposed to radiation. | CO3 | PO6 | **10** |
| | | b) | Explain the effect of radiation on DNA and the recovery process of DNA. | CO3 | PO6 | **10** |
| | | | **UNIT - V** | | | |
| | 6 | a) | "Potassium is necessary for plants growth and health". Substantiate the sentence in detail with relevant diagrams. | CO4 | PO7 | **10** |
| | | b) | Explain with relevant diagrams, effects of Nitrogen on Plant Growth and Quality. | CO4 | PO7 | **10** |
| | | | **OR** | | | |
| | 7 | a) | What are the different nutrients that plants need? Describe. | CO4 | PO7 | **08** |
| | | b) | Describe the function of phosphorus in plants with relevant diagrams. | CO4 | PO7 | **06** |
| | | c) | Discuss the benefits and need for organic farming. | CO4 | PO7 | **06** |

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