**18CE002**

**Hall Ticket Number:**

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| **II/IV B.Tech (Regular/Supplementary) DEGREE EXAMINATION** | | | |
| **August, 2021** | **Electrical & Electronics Engineeing** | | |
| **Fourth Semester** | **Biology for Engineers** | | |
| **Time:** Three Hours | | **Maximum: 5**0 Marks | |
| *Answer Question No. 1 Compulsorily.* | | | (10X1 = 10 Marks) |
| *Answer* ***ANY ONE*** *question from each Unit.* | | | (4X10=40 Marks) |

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| 1. | a) | Present the role of engineers in biological field. | CO1 | |  |
|  | b) | What is a kingdom in biology. | CO1 | |  |
|  | c) | List out two functions of biomolecules. | CO2 | |  |
|  | d) | List the four phases involved in bacterial growth curve. | CO2 | |  |
|  | e) | What is the type of a bacteria based on nutrition ? | CO2 | |  |
|  | f) | Differentiate producers, consumers and decomposers. | CO1 | |  |
|  | g) | State Chargaff’s rule. | CO3 | |  |
|  | h) | Mention the major types of RNA. | CO3 | |  |
|  | i) | Applications of sterilization. | CO4 | |  |
|  | j) | Medicinal importance of one plant. | CO4 | |  |
| **Unit – I** | | | | | |
| 2. | a) | Explain five kingdom classifications of microorganisms with neat labeled diagrams. | CO1 | **10M** | |
|  |  | **(OR)** |  |  | |
| 3. | a) | Distinguish between prokaryotes and eukaryotes with neat labeled diagrams. | CO1 | **5M** | |
|  | b) | Why is Mitochondria called as power house of the cell ? | CO1 | **5M** | |
| **Unit – II** | | | | | |
| 4. | a) | Distinguish between mitosis and meiosis with the help of diagrammatic representation. | CO2 | **10M** | |
|  |  | **(OR)** |  |  | |
| 5. | a) | Discuss on bacterial binary fission. | CO2 | **5M** | |
|  | b) | List out steps involved in bacterial endospore formation. | CO2 | **5M** | |
| **Unit – III** | | | | | |
| 6. | a) | Construct the structure of DNA with a neat labeled diagram. | CO3 | **10M** | |
|  |  | **(OR)** |  |  | |
| 7. | a) | Sketch quaternary structure of a protein with an example. | CO3 | **5M** | |
|  | b) | List out five differences between DNA and RNA. | CO3 | **5M** | |
| **Unit – IV** | | | | | |
| 8. | a) | Explain the physical methods of sterilization. | CO4 | **10M** | |
|  |  | **(OR)** |  |  | |
| 9. | a) | Discuss in detail on gaseous chemical sterilization. | CO4 | **5M** | |
|  | b) | Explain any five beneficial aspects of bacteria. | CO4 | **5M** | |

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