

SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR
(AUTONOMOUS)

B.Tech II Year I Semester Supplementary Examinations June-2024

BIOLOGY FOR ENGINEERS

(Common to EEE, CE, AGE & ME)

Time: 3 Hours

Max. Marks: 60

PART-A

(Answer all the Questions 5 x 2 = 10 Marks)

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|---|---|--|-----|----|----|
| 1 | a | Define taxonomy. | CO1 | L2 | 2M |
| | b | Define Mendel 1 st and 2 nd law. | CO1 | L2 | 2M |
| | c | Write any four functions of proteins. | CO2 | L3 | 2M |
| | d | What are two purines & pyrimidines of DNA? | CO3 | L2 | 2M |
| | e | Define stem cells & their functions. | CO4 | L2 | 2M |

PART-B

(Answer all Five Units 5 x 10 = 50 Marks)

UNIT-I

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|---|---|--|-----|----|----|
| 2 | a | Define Habitat. Explain Terrestrial Havitat. | CO1 | L2 | 5M |
| | b | How autotrophs utilize carbon and energy? | CO1 | L3 | 5M |

OR

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|---|---|---|-----|----|----|
| 3 | a | Explain the classification of organisms based on carbon utilization of organisms. | CO1 | L2 | 5M |
| | b | Write the differences between Plant cell and Animal cell. | CO1 | L3 | 5M |

UNIT-II

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|---|---|--|-----|----|----|
| 4 | a | Discuss on Geme mapping. | CO2 | L2 | 5M |
| | b | Define gene Interaction. Give brief account on Dominant Epistasis with suitable example. | CO2 | L3 | 5M |

OR

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|---|---|---|-----|----|----|
| 5 | a | What are lipids? Classify and explain different types of lipids. | CO2 | L2 | 5M |
| | b | What are the macro molecules and its types? Write the functions of macro molecules. | CO2 | L4 | 5M |

UNIT-III

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|---|---|---|-----|----|----|
| 6 | a | Describe the following
i) RNA catalysis. ii) Kinetic parameters related too biology. | CO3 | L2 | 5M |
| | b | Describe the nature, properties, and nomenclature of enzymes. | CO3 | L2 | 5M |

OR

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|---|---|--|-----|----|----|
| 7 | a | Explain the following in detail.
i). Coding and decoding genetic information transfer.
ii). R-DNA duplication. | CO3 | L3 | 6M |
| | b | Explain about on Genetic material of DNA. | CO3 | L2 | 4M |

UNIT-IV

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|---|---|--|-----|----|----|
| 8 | a | Explain genetic code & Degeneracy of genetic code. | CO4 | L2 | 6M |
| | b | Define transgenic plants & its applications. | CO4 | L2 | 4M |

OR

- 9 a Give brief account on hierarchy of DNA structure from single strand to double helix? **CO4 L2 5M**
b Explain gene complementation and recombination. **CO4 L2 5M**

UNIT-V

- 10 a Explain identification and classification of microorganisms **CO5 L2 5M**
b What are the principles of energy transaction in physical and biological world? **CO5 L2 5M**

OR

- 11 a Explain the following in brief **CO5 L3 5M**
(i) ATP as energy currency (ii) Photosynthesis (iii) Growth kinetics.
b How to prepare culture medium? Explain it in detail **CO5 L2 5M**

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