



**SNS COLLEGE OF ENGINEERING**  
Kurumbapalayam (Po), Coimbatore – 641 107  
AN AUTONOMOUS INSTITUTION



Approved by AICTE, New Delhi and Affiliated to Anna University, Chennai

**Subject with Code: BIOLOGY FOR ENGINEERS(19BY701 )**  
**Year &Sem: VII- 4th Year**

**Branches: EEE,**  
**Regulation: R19**

**QUESTION BANK**  
**UNIT – I**

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|-----|---|-----|
| 1.  | (a) Define biology?   | 2M  |
|     | (b) What is autotrophs & heterotrophs?  | 2M  |
|     | (c) Define taxonomy?  | 2M  |
|     | (d) What are the three domains (kingdoms) of life?  | 2M  |
|     | (e) What is cell?   | 2M  |
| 2.  | a. Draw ultra structure of Prokaryotic cell.  | 5M  |
|     | b. Compare the characteristics of Prokaryotic and Eukaryotic cell   | 5M  |
| 3.  | a. Classify Kingdom Protista and Kingdom Animalia.  | 5M  |
|     | b. Write short notes on unicellular and Multicellular with examples   | 5M  |
| 4.  | What are Model organisms? Give brief notes on any three model organisms   | 10M |
| 5.  | a Explain mode of excretion in Urinotelic organisms   | 5M  |
|     | b Write carbon and Energy Utilization in lithotrophs  | 5M  |
| 6.  | a Define Habitat. Explain Terrestrial Habitat.  | 5M  |
|     | b How autotrophs utilize carbon and energy?   | 5M  |
| 7.  | Write the differences between Plant cell and Animal cell.   | 10M |
| 8.  | a. Define classification  | 5M  |
|     | b. What are the Divisions in Kingdom Plantae?   | 5M  |
| 9.  | a. Describe Amminotelism and Uricotelism.   | 5M  |
|     | b. Draw labeled diagram of Animal cell as seen in Electron microscope. Comment on characteristics of Animal cell. | 5M  |
| 10. | Explain the classification of organisms based on carbon utilization of organisms                                  | 10M |

UNIT-I

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|-----------|---|-----|
| <b>1</b>  | (a) What are polysaccharides?   | 2M  |
|           | (b) Write any four functions of proteins?   | 2M  |
|           | (c) List the two types of lipids and their functions?                               | 2M  |
|           | (d) How many types of nucleic acids are there? And write any two functions.         | 2M  |
|           | (e) List some important organic compounds present in living organisms?              | 2M  |
| <b>2</b>  | Define enzymes and its role in plants?  | 10M |
| <b>3</b>  | Describe the enzyme nature, properties and nomenclature?                            | 10M |
| <b>4</b>  | Describe the enzyme action and kinetics?  | 10M |
| <b>5</b>  | What are lipids? Classify and explain different types of lipids                     | 10M |
| <b>6</b>  | What are the macro molecules and its types? Write the functions of macro molecules. | 10M |
| <b>7</b>  | What are carbohydrates? Classify and explain monosaccharides                        | 10M |
| <b>8</b>  | Biological classification of amino acids and their importance                       | 10M |
| <b>9</b>  | Describe the following  | 10M |
|           | a) RNA catalysis.      (b) Kinetic parameters related too biology.                  |     |
| <b>10</b> | <b>a</b> Define polysaccharides with suitable examples                              | 5M  |
|           | <b>b</b> What are Nucleotides?  | 5M  |

## UNIT I

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|-----------|---|-----|
| <b>1</b>  | (a) Distinguish between DNA and RNA?  | 2M  |
|           | (b) Draw a neat diagram of DNA double helix structure?                              | 2M  |
|           | (c) What is complementation?  | 2M  |
|           | (d) Write full form of M-RNA& TRNA & their functions?                               | 2M  |
|           | (e) What are the two Purines & Pyrimidines of DNA?                                  | 2M  |
| <b>2</b>  | Explain genetic code & Degeneracy of genetic code?                                  | 10M |
| <b>3</b>  | Explain & Describe the R-DNA technology methods?                                    | 10M |
| <b>4</b>  | Define transgenic plants & its applications?  | 10M |
| <b>5</b>  | Give brief account on hierarchy of DNA structure from single stand to double helix? | 10M |
| <b>6</b>  | Explain about on Genetic material of DNA?   | 10M |
| <b>7</b>  | Explain the following in detail   | 10M |
|           | a. Coding and decoding genetic information transfer.                                |     |
|           | b. R-DNA duplication.   |     |
| <b>8</b>  | Give an account on  | 10M |
|           | a. Proteins as enzymes.   |     |
|           | b. Protein as Structural elements   |     |
| <b>9</b>  | <b>a</b> What are the functions & Structure of Proteins?                            | 10M |
|           | <b>b</b> Explain gene- complementation and recombination                            | 10M |
| <b>10</b> | Explain the Laws of Thermodynamics in biological systems.                           | 10M |

## UNIT-V

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|----|---|-----|
| 1  | (a) What are photo systems?   | 2M  |
|    | (b) Difference between aerobic & anaerobic respiration?                         | 2M  |
|    | (c) What are the general features of TCA cycle?                                 | 2M  |
|    | (d) What is sterilization?  | 2M  |
|    | (e) Define stem cells & their functions?  | 2M  |
| 2  | Explain the glycolysis process in detail.                                       | 10M |
| 3  | Describe the kerbs cycle in detail.   | 10M |
| 4  | Explain identification and classification of microorganisms                     | 10M |
| 5  | What are the principles of energy transaction in physical and biological world? | 10M |
| 6  | Give an account on energy yielding and energy consuming reactions?              | 10M |
| 7  | Write a note on sterilization and various techniques used.                      | 10M |
| 8  | Explain the following in brief  | 10M |
|    | (a) ATP as energy currency      (b) Photosynthesis      (c) Growth kinetics.    |     |
| 9  | Explain exothermic and endothermic reactions.                                   | 10M |
| 10 | How to prepare culture medium? Explain it in detail                             | 10M |