

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

Autonomous Institute Affiliated to VTU

August 2024 Supplementary Examinations

Programme: B.E.

Branch: Chemical Engineering

Course Code: 19CH7BSBFE

Course: Biology For Engineers

Semester: VII

Duration: 3 hrs.

Max Marks: 100

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

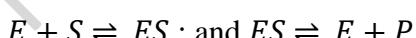
1. a) What is chromosome? Explain the types of chromosome with examples. **06**
b) Classify lipids and describe the functions of lipids. **06**
c) Draw and mark different components of prokaryotic cell with a neat diagram. **08**

OR

2. a) Explain the functions of protein molecules. **05**
b) Explain the structure of the eukaryotic cells with a neat diagram. **10**
c) Classify carbohydrates with an example. **05**

UNIT - II

3. a) Enzymatic reaction is carried out as the reaction schemes shown below. **06**



Develop a rate expression for product formation by applying M.M. kinetics approach.

b) Differentiate between competitive and non-competitive enzyme inhibition with the help of reaction mechanisms. **08**
c) List and illustrate the features of enzyme as catalyst. **06**

UNIT - III

4. a) Explain the structure of the antibody with a neat diagram. **08**
b) Illustrate the properties and function of the Immunoglobulin M (IgM) antibody. **06**

c) Define innate immunity. Explain the mechanism of anatomical and phagocytosis barriers in detail. **06**

UNIT - IV

5. a) With a neat diagram explain the working of biosensors. **06**

b) What is DNA microarray tool? Explain **04**

c) Explain the different phases involved in packing of DNA molecule into mammalian chromosomes with a neat diagram. **10**

OR

6. a) Explain the working of the glucose meter with the help of glucose meter block diagram. **08**

b) Elucidate on the applications of bioinformatics tool with a suitable example. **06**

c) What are liposomes? Explain their function as nanomaterial/nanoparticle **06**

UNIT - V

7. a) What is genetic engineering? Explain its applications. **08**

b) Elucidate on the different components and working of biological neural networks. **06**

c) What are stem cells? Explain the importance of Pluripotent and adult stem cells. **06**
