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

Autonomous Institute Affiliated to VTU

May 2023 Semester End Make-Up Examinations

Programme: B.E.

Branch: Civil Engineering

Course Code: 21CV7BSBFE

Course: Biology for Engineers

Semester: VII

Duration: 3 hrs.

Max Marks: 100

Date: 19.05.2023

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) With the help of labelled diagram differentiate between prokaryotes and eukaryotes in terms of their cell boundaries and interior organization. **10**
b) Classify vitamins based on its solubility. Name the source and deficiency disorder of vitamin A and Vitamin K. **10**

OR

2 a) How important nucleus to the cell? Differentiate between DNA and RNA **3+7**
b) “Amino acids are the building blocks of protein”. Justify this statement and also write on its structure and functions of amino acids **10**

UNIT - II

3 a) What is Holoenzyme? Write on cofactor and coenzyme **5+5**
b) Write Michaelis-Menten equation of enzyme kinetics. Discuss how enzymes speed up the rate of reaction **10**

UNIT - III

4 a) Discuss on different types of barriers of innate immunity. Explain their role has first line defense against the infectious microorganism **5+5**
b) Elaborate on types of acquired immunity with examples and also add a note on T cell importance **5+5**

UNIT - IV

5 a) Explain the principle of biosensors and what are the medical condition does it detect. **8+2**
b) Why do we call biochip a miniature laboratory? What is its importance in medical field **7+3**

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 - V

6 a) Explain the steps involved in modification of genome of organism by using recombinant DNA technology **10**

b) “Neural network is called as backbone of deep learning”. Justify this statement and write on application of ANN **6+4**

OR

7 a) Discuss on Human embryonic stem cell. Write on its importance in treating the diseases **5+5**

b) By taking pea plant as example explain the law of dominance and segregation **5+5**
