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

Autonomous Institute Affiliated to VTU

## April 2024 Semester End Main Examinations

**Programme: B.E.**

**Branch: Industrial Engineering and Management**

**Course Code: 23IM3BSBFE**

**Course: Biology For Engineers**

**Semester: III**

**Duration: 1 hr.**

**Max Marks: 50**

**Instructions:** 1. Answer all the questions from Part A.  
2. Answer any 3 questions from Part B.

<b>Important Note:</b> Completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages. Revealing of identification, appeal to evaluator will be treated as malpractice.	<b>1</b>	<b>Multiple choice Questions</b>	<b>CO</b>	<b>PO</b>	<b>Marks</b>
	a)	Empirical chemical formula of carbohydrates is _____. (i) $(2CH_2O)_n$ (ii) $2(CH_2O)_n$ (iii) $(CH_2O)_2$ (iv) $C_n(H_2O)_n$	CO1	PO1	<b>01</b>
	b)	The DNA molecule is packaged into thread-like structures called _____. (i) chromosome (ii) nucleus (iii) cell wall (iv) cytoplasm	CO1	PO1	<b>01</b>
	c)	Which of these is not a fat soluble vitamin? (i) A (ii) D (iii) M (iv) K	CO1	PO1	<b>01</b>
	d)	Active sites occupy less than ____% of the total surface of enzymes. (i) 5 (ii) 10 (iii) 7 (iv) 15	CO2	PO1 PO10	<b>01</b>
	e)	The Nervous system composed of _____. (i) brain (ii) spinal cord (iii) nerves (iv) all of these	CO4	PO1 PO7	<b>01</b>
	f)	_____ is a type of polysaccharide produced by plants for energy storage. (i) Starch (ii) Fats (iii) Vitamins (iv) Minerals	CO1	PO1	<b>01</b>
	g)	The major function of fat is _____. (i) to produce energy (ii) to store energy (iii) to convert energy (iv) to consume energy	CO1	PO1	<b>01</b>
	h)	Ribose is a _____ carbon sugar. (i) two (ii) six (iii) seven (iv) five	CO1	PO1	<b>01</b>
	i)	The chemical junction between the terminal and neuron is _____. (i) dendrites (ii) cell body (iii) synapse (iv) axon	CO4	PO1	<b>01</b>
	j)	Which is not a basic character of biosensors? (i) non linear (ii) sensitivity (iii) selectivity (iv) response time	CO4	PO1 PO7 PO10	<b>01</b>

	k)	Protein synthesis takes place inside the _____ in the cytoplasm. (i) cell wall (ii) nucleus (iii) vacuoles (iv) endoplasmic reticulum	CO1	PO1	01
	l)	Cilia and flagella are the organelles of cell _____. (i) division (ii) movement (iii) reproduction (iv) growth	CO1	PO1	01
	m)	A _____ is a membrane-bound storage vesicle within a cell. (i) vacuole (ii) nucleus (iii) mitochondria (iv) endoplasmic reticulum	CO1	PO1	01
	n)	Cells were discovered by _____. (i) Robert Hooke (ii) Robert cook (iii) Laurel Hooke (iv) Louis Pasteur	CO1	PO1	01
	o)	Enzymes are synthesized by _____. (i) Ribosomes (ii) proteins (iii) catalyst (iv) DNA	CO2	PO1 PO9	01
<b>2</b>		<b>Fill in the Blanks</b>			
	a)	_____ belongs to the class of proteins called Immunoglobulins.	CO3	PO1 PO9	01
	b)	_____ is the study of heredity and variation.	CO4	PO1 PO8	01
	c)	Study of organisms which are small are called _____.	CO3	PO1	01
	d)	Study of motion is called _____.	CO4	PO1	01
	e)	_____ is the powerhouse of the cell.	CO1	PO1	01
		<b>Part B</b>			
<b>3</b>	a)	Mention the characteristics of living Organisms.	CO1	PO1	05
	b)	Difference Between Prokaryotes and Eukaryotes with the diagram.	CO1	PO1	05
<b>4</b>	a)	List the characteristics of Enzymes. Give 2 examples of Enzymes.	CO2	PO1	04
	b)	Describe in detail the Types of Enzyme Inhibition with diagram.	CO2	PO1 PO7	06
<b>5</b>	a)	Define Immunity and Elaborate on the types of Immunity and the cells involved in them.	CO3	PO1	05
	b)	List the importance of Microbiology in various fields of biology.	CO3	PO1 PO5 PO7	05
<b>6</b>	a)	Write the principle of Biosensor. What are the applications of biosensors.	CO4	PO1 PO7 PO8	06
	b)	Define Bioinformatics and list its application in the field of science.	CO4	PO1 PO5 PO7 PO8	04

	<b>7</b>	a)	Define Stem Cells and mention its advantages and disadvantages.	<i>CO4</i>	<i>PO1</i> <i>PO7</i> <i>PO8</i>	<b>04</b>
		b)	Mention the applications of Genetic Engineering in Various fields of biology.	<i>CO4</i>	<i>PO1</i> <i>PO7</i> <i>PO8</i>	<b>06</b>

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