Reg. No.														

B.Tech. DEGREE EXAMINATION, JUNE 2023

First and Second Semester

21BTB102T – INTRODUCTION TO COMPUTATIONAL BIOLOGY

(For the candidates admitted from the academic year 2022-2023)

Note:

(i) **Part - A** should be answered in OMR sheet within first 40 minutes and OMR sheet should be handed over to hall invigilator at the end of 40th minute.

(ii) **Part – B** and **Part – C** should be answered in answer booklet.

Time: 3 Hours | Max. Marks: 75

	Marks	BL	CO	PO
PART – A (20 × 1 = 20Marks) Answer **ALL** Questions				
1. In cell division, _____is for cytoplasm division. (A) Meiosis (B) Cytokinesis (C) Interphase (D) Prophase	1	1	1	4
2. The genetic material in a nucleoid region is seen in (A) Bacteria (B) Plant (C) Animals (D) Yeast	1	1	1	4
3. Robert Hooke presented a term called (A) Life (B) Cell (C) Biology (D) Biotechnology	1	1	1	4
4. The work horses of a cell are (A) Ribosome (B) Ribonucleotide (C) Deoxynucleotide (D) Mitochondria	1	1	1	4
5. Transport of amino acids at the site of protein synthesis is carried out by (A) sRNA (B) mRNA (C) rRNA (D) tRNA	1	1	2	1,4
6. Blastocysts is a (A) Multicellular stage of embryo (B) Zygote (C) 8 cell stage of embryo (D) Fertilized cell	1	1	2	1,4
7. DNA is made of A, T, G, C. how many bonds between an 'A' and a 'T' (A) 1 (B) 2 (C) 3 (D) 4	1	1	2	1,4
8. A program compares nucleic acid sequence against a protein database (A) Blast N (B) Blast P (C) Blast X (D) T Blast X	1	1	2	1,4
9. When codon UGA is encountered? (A) Transcription stops (B) Translation begin (C) Translation steps (D) Transcription starts	1	1	3	2,5

10.	Amino acids are joined together in a polypeptide called (A) Protein (B) DNA (C) RNA (D) Carbohydrates	1	1	3	2,5
11.	Cofactor is (A) Vitamins (B) Metal ion (C) Iodine (D) Oxygen	1	1	3	2,5
12.	Molecular visualization tool is (A) Pymol (B) Pyzol (C) Blast (D) NCBI	1	1	3	2,5
13.	Star shaped brain cells are (A) Astrocytes (B) Microglia (C) Dendrocytes (D) Axons	1	1	4	1,5
14.	_____ are released at the synapse (A) Neutrotransmitter (B) Glucose (C) Neurotransmitter (D) ATP	1	1	4	1,5
15.	ANN does NOT contain this part (A) Axon (B) Dendrite (C) Synapse (D) 'N' population	1	1	4	1,5
16.	Alzheimer's is caused by (A) Plaques (B) Dopamine related neurons (C) Spongiform (D) Encephalitis	1	1	4	1,5
17.	Which of the following is rich in immune cells? (A) Blood (B) Lymph (C) Saliva (D) Pancreas	1	1	5	1,5
18.	Polio drops are (A) Killed vaccine (B) Live attenuated vaccine (C) Recombinant vaccine (D) DNA vaccine	1	1	5	1,4
19.	Epitope is present (A) Antigen (B) Antibody (C) Nerve cell (D) Plasma	1	1	5	1,4
20.	Find the "odd one out" of the T cell epitope production tool (A) Net chop (B) Propred (C) Bcepred (D) NetMHCpern	1	1	5	1,5

PART – B (4 × 10 = 40 Marks)
Answer **ANY FOUR** Questions

		Marks	BL	CO	PO
21.	Describe the structure and function of plant cell organelles.	10	2	1	4
22.	Describe nucleic acids.	10	2	2	1
23.	Give the tools and a short description of methods to predict protein secondary structure.	10	2	3	2
24.	Give uses of machine barning in biology.	10	2	4	1
25.	Illustrate humoral immune response.	10	2	5	1
26.	Give the characteristics of uses of stem cell.	10	2	1	4

PART – C (1 × 15 = 15 Marks)
Answer **ANY ONE** Questions

		Marks	BL	CO	PO
27.	What happens as a response by the body when vaccine is administered to the body?	15	3	5	1
28.	Give details of Parkinson's disease with respect to neurons. "The cause and effect of the disease".	15	3	4	1,5

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