Register No: _____

THE KAVERY ENGINEERING COLLEGE

(An Autonomous Institution)

B.E/B.TECH DEGREE END SEMESTER THEORY EXAMINATIONS, NOV/DEC 2025

Third Semester

Biomedical Engineering

UBMTL24301- Anatomy and Human Physiology

Regulations - 2024

Duration : 3 Hrs *Maximum : 100 Marks*

*PART – A (ANSWER ALL QUESTIONS) (Marks 10*2=20)*

Q.No	*Questions*	*BTL*	*CO*	*Marks*
1.	What is the role of Golgi apparatus?	L1	1	2
2.	Examine the functions of the Smooth Endoplasmic Reticulum (SER) in human cells.	L2	1	2
3.	Differentiate between long bones and short bones in terms of structure and function.	L2	2	2
4.	Draw and label the structure of skeletal muscle, and use it to explain how its arrangement supports contraction and movement.	L2	2	2
5.	Compare systemic and pulmonary circulation.	L2	3	2
6.	Give the method to identify the blood groups in human.	L1	3	2
7.	How is fat digested and absorbed in the GI tract?	L1	4	2
8.	What are the steps in urine formation?	L1	4	2
9.	What is a neurotransmitter? Give at least 3 examples.	L1	5	2
10.	Draw a diagram of simple reflex arc.	L2	5	2

*PART – B (ANSWER ALL QUESTIONS) (Marks 5*16 = 80)*

Q.No		*Questions*	*BLT*	*CO*	*Marks*
11.	a	Classify the human cell structure and draw a neat labeled diagram of a human cell and indicate the functions of its major organelles.	L2	1	16
		Or			
	b	Explain in detail the structure of the cell membrane and the transport mechanisms involved in it with neat diagram.	L2	1	16
12.	a	Illustrate the steps of bone formation and highlights the role of different cells and hormones.	L2	2	16
		Or			
	b	Draw a diagram of lower respiratory tract and explain in detail.	L2	2	16
13.	a i	Analyze conduction system of the heart with a neat diagram.	L4	3	8
	ii	Survey, how conduction abnormalities alter the cardiac cycle and cardiac output.	L4	3	8
		Or			

	b	Inspect the interrelated roles of red blood cells, white blood cells, and platelets in maintaining overall health and explain how their collective functions contribute to homeostasis.	L4	3	16
14.	a	Build the structure of the nephron and relate it to clinical conditions that affect its function.	L3	4	16
		Or			
	b	Apply your understanding to draw a labeled diagram of the kidney, explain the function of each part, and connect it with clinical problems when these parts are affected.	L3	4	16
15.	a	Write an essay about synapses, types and its clinical importance.	L2	5	16
		Or			
	b	What are the tracts seen in the spinal cord and its role in controlling body structures with suitable diagram?	L2	5	16