

THE KAVERY ENGINEERING COLLEGE*(An Autonomous Institution)***B.E/B.TECH DEGREE END SEMESTER THEORY EXAMINATIONS, APRIL-MAY 2025***Third Semester**Biomedical Engineering***BM3351 – Anatomy and Human Physiology***Regulations – 2021***Duration : 3 Hrs****Maximum : 100 Marks****PART – A (ANSWER ALL QUESTIONS) (Marks 10*2=20)**

Q.No	Questions	BLT	CO	Marks
1.	Point out the general functions of nucleoli.	RE	1	2
2.	Define Homeostasis.	RE	1	2
3.	How does the structure of cartilage contribute to its function as a shock absorber?	AN	2	2
4.	What is the primary neurotransmitter involved in neuromuscular transmission?	RE	2	2
5.	How can you calculate cardiac output?	AP	3	2
6.	Name the organs forming the respiratory passageway from the nasal cavity to the alveoli of the lungs.	RE	3	2
7.	The stomach epithelium secretes several substances, including alkaline mucus and intrinsic factor. What is the function of each of these two secretions?	AN	4	2
8.	Which regulation mechanism is to be applied to maintain a normal body temperature?	UN	4	2
9.	Specify the structural and functional classifications of the nervous system.	RE	5	2
10.	Mention the role of the olfactory system in taste perception.	RE	5	2

PART – B (ANSWER ALL QUESTIONS) (Marks 5*13 = 65)

Q.No	Questions	BLT	CO	Marks
11.	a i Enumerate the four structural components of the plasma membrane and the function of each.	AN	1	7
	ii Express different processes through which transportation of substances occurs between cells.	AN	1	6
	Or			
	b i Analyze the criteria that could distinguish epithelial tissues from other tissues.	AN	1	7
	ii Calculate membrane potential based on the concentrations and permeabilities of multiple ions using Goldman equation.	AN	1	6
12.	a Compare and contrast the structure and function of skeletal, smooth, and cardiac muscle.	UN	2	13

Or

- b Explain different types of muscle tissues in the human body along with its functions. UN 2 13
13. a i Draw and describe in detail different types of blood vessel and clinical problems related to it. UN 3 7
- ii Write an essay about conducting system of heart with diagram. UN 3 6
- Or**
- b i Explicate in detail about inspiration and expiration mechanisms and factors affecting each mechanism. UN 3 7
- ii Explain how changes in lung volumes can affect gas exchange. UN 3 6

14. a Interpret absorption mechanism of different components carried out at different locations in GI tract. UN 4 13

Or

- b Describe detailed note on mechanism of Urine formation with diagram and clinical conditions associated with it. UN 4 13
15. a i Illustrate different brain lobes with its functional areas controlling different parts of human body with clinical importance. AN 5 7
- ii Analyze the structure of spinal cord and describe its anatomy. AN 5 6

Or

- b i Analyze the methods used to correct cataracts problems that arise due to ageing. AN 5 7
- ii Using Audiometer, how will you determine the hearing disability of a person? AN 5 6

PART – C (Marks 1*15 = 15)

Q.No		Questions	BLT	CO	Marks
16.	a	Analyze the relationship between lung volumes and pulmonary function tests.	AN	3	15
		Or			
	b	Determine the route of sound wave through the ear and explain the function of different parts of ear it passes by.	AN	5	15