

THE KAVERY ENGINEERING COLLEGE
(An Autonomous Institution)

B.E/B.TECH DEGREE END SEMESTER THEORY EXAMINATIONS, NOV /DEC 2024

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)

<i>Q.No</i>	<i>Questions</i>	<i>BLT</i>	<i>CO</i>	<i>Marks</i>
1.	Mention 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?	RE	2	2
4.	What is the primary neurotransmitter involved in neuromuscular transmission?	RE	2	2
5.	How can you calculate cardiac output?	UN	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)

<i>Q.No</i>	<i>Questions</i>	<i>BLT</i>	<i>CO</i>	<i>Marks</i>
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)

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