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ANNA UNIVERSITY (UNIVERSITY DEPARTMENTS)
B.E. /B.Tech / B. Arch (Full Time) - END SEMESTER EXAMINATIONS, APR / MAY 2025
BIOMEDICAL ENGINEERING
II Semester
BM23202 Anatomy and Physiology
(Regulation2023)

Time: 3hrs

Max. Marks: 100

CO1	Understand the basic structural and functional elements of human body.
CO2	Understand the gaseous exchange and fluid maintenance in the human body
CO3	Understand the organs and structures involving in system formation and functions.
CO4	Analyze the functions of physiological system
CO5	Comprehend the activity of sensory and motor nerves.

BL – Bloom's Taxonomy Levels

(L1-Remembering, L2-Understanding, L3-Applying, L4-Analysing, L5-Evaluating, L6-Creating)

PART- A(10x2=20Marks)
(Answer all Questions)

Q. No.	Questions	Marks	CO	BL
1	Identify the energy source for active transport and give its structure?	2	1	L3
2	Illustrate the forces that favor net filtration process?	2	3	L3
3	Inspect over the function of heart valves in preventing regurgitation?	2	3	L3
4	Identify factor that prevents food bolus from entering the airways?	2	2	L3
5	Compare the layers of blood vessels based on their thickness and composition?	2	4	L4
6	If the articular cartilage of the bone was degenerated, what were the symptoms exhibited? Why it happens?	2	4	L4
7	Illustrate the changes occur at the cellular level when muscles are exposed to intense exercise?	2	3	L3
8	Biological membranes are semi permeable in nature-Justify	2	1	L4
9	Analyze what might be the underlying reason for a person to be blind, in spite of normal functioning of retina?	2	5	L4
10	Analyze the reason why the reflex action occurs at spinal cord not from the brain?	2	5	L4

PART- B(5x 13=65Marks)
(Restrict to a maximum of 2 subdivisions)

Q. No.	Questions	Marks	CO	BL
11 (a)	Illustrate the resting potential and action potential?	13	1	L2
OR				
11 (b)	Explain the functions of sub cellular organelles?	13	1	L2
OR				
12 (a)	How gaseous exchanges occur in pulmonary alveoli?	13	2	L1
OR				
12 (b)	How urine is formed and its hormonal influences?	13	2	L1
OR				
13 (a)	Analyze the involvement of skeletal and muscular system, when a person runs on a treadmill?	13	4	L3

OR

13 (b)	Identify mechanoreceptors in human senses. Explain the type of stimuli and its mode of action?	13	4	L3
14 (a)	Explain the composition and functions of blood cells?	13	3	L2
	OR			
14 (b)	Illustrate cardiac cycle with a neat diagram?	13	3	L2
15 (a)	In recent days to a great extent interest is shown on ANS in analyzing diseased condition, examine and interpret its role in cardiovascular disease?	13	5	L4
	OR			
15 (b)	A person recovered from stroke has difficulty in clear speaking, analyze the prevailing condition and discuss on the localization hemisphere and which part might have damaged?	13	5	L4

PART- C(1x 15=15Marks)

(Q.No.16 is compulsory)

Q. No.	Questions	Marks	CO	BL
16.	Suppose a sudden hyponatremic condition (low sodium levels/electrolytes) and blood pressure of 90/50mmHg in a healthy individual had occurred and that were efficiently reverted back to normal. What might have influenced in reversion process and infer your answer.	15	5	L5

