VIT

Vellore Institute of Technology

SLOT:A1

Vellore – 632014, Tamil Nadu, India

SCHOOL OF ELECTRICAL ENGINEERING

FALL SEMESTER 2024-2025

CAT-1

Programme: B.Tech	**Branch:ECE**	**Course code: BBMD101L**
Course Name: Anatomy and Physiology		**Date: 25/08/2024**
Class Nbr: VL2024250104164	**Max Marks: 50**	**Duration: 90 mins**
Faculty name(s): ***Subhathirai S P***		

General instruction(s): 1. Answer ALL draw labeled diagrams when required.

Q. No	Question	Marks
1.	Combine your understanding of the different types of cell junctions—tight junctions, adherens junctions, desmosomes, and gap junctions—to design a model that explains how these junctions collectively maintain the integrity and function of epithelial tissues. Additionally, predict the potential outcomes on tissue homeostasis and disease progression if any of these junctions were to malfunction.	10
2.	Integrate your knowledge of the anatomical boundaries and functions of the thoracic cavity, to develop a comprehensive model that demonstrates how these cavities protect and organize vital organs. Additionally, propose a plan to address the structural and physiological challenges that arise from pathological conditions like fluid accumulation in them.	10
3.	Illustrate how erythropoiesis collectively maintains optimal oxygen transport in the body. Additionally, design a strategy to manage the physiological consequences that arise from disruptions in this process, such as those seen in anemia or polycythemia	10
4.	Construct a comprehensive model that explains how circulatory systems collaborate to maintain efficient oxygenation and nutrient delivery. Additionally, devise a plan to address the potential impacts on cardiovascular function that could arise from vessel blockages within these pathways.	10
5.	Elaborate your understanding of the phases of neuronal action potential—depolarization, repolarization, and hyperpolarization—to create a detailed model that demonstrates how these phases work together to transmit electrical signals along neurons.	10