

Name:

Enrolment No:



UNIVERSITY OF PETROLEUM AND ENERGY STUDIES

End Semester Supplementary Examination, December 2023

Course: Human Anatomy & Physiology I

Program: BSc/Integrated BMSc –MB./N&D.


Course Code: HSCC1002

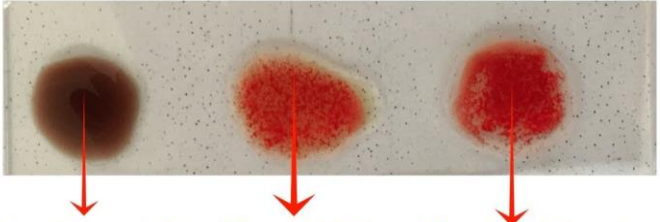

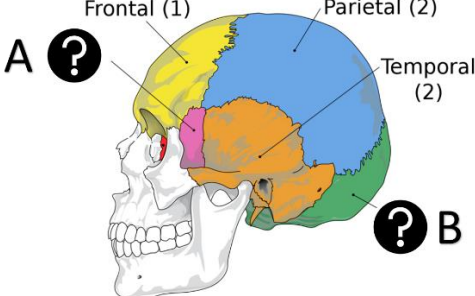
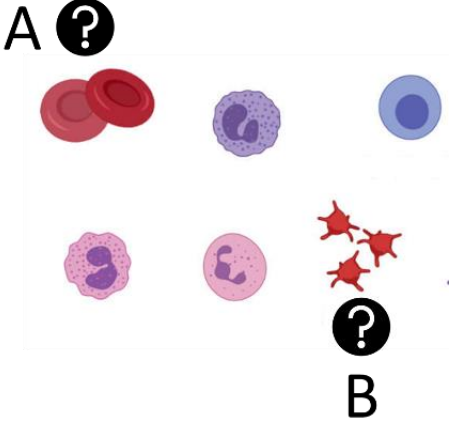
Semester: 1st

Duration: 3 Hours

Max. Marks: 100

Instructions: Read all questions carefully.

S. No.	Section A	Marks	COs
	Short answer questions/ MCQ/T&F (20Qx1.5M= 30 Marks)		
Q			
1	_____ are known as the powerhouse of the cell.	1.5	CO 1
2	The lymphatic system plays role in immunity. (True/False)	1.5	CO 1
3	List the four phases of mitosis.	1.5	CO 1
4	Calculate the patient's cardiac output when her heart rate and stroke volume is 80 bpm and 70 mL respectively.	1.5	CO 1
5	Define Homeostasis.	1.5	CO 1
6	Lymph nodes are also referred as _____.	1.5	CO 1
7	Draw the structure of heart.	1.5	CO 1
8	Name the formed elements found in blood.	1.5	CO 1
9	The study of bone and teeth is known as _____.	1.5	CO 1
10	Sketch the well-labelled diagram of cross-section of skin.	1.5	CO 1
11	Identify the bone highlighted in red? 	1.5	CO 1
12	The cross striated involuntary muscles found in the myocardium of heart are known as _____.	1.5	CO 1
13	Hemophilia is a genetic clotting disorder. (True/False)	1.5	CO 1

14	<p>Determine the blood group.</p>  <p>A Remain Same as Earlier B Shows Agglutination D Shows Agglutination</p>	1.5	CO 1
15	<p>Name the plane dividing the body vertically.</p> 	1.5	CO 1
16	<p>Identify the bones.</p> 	1.5	CO 2
17	<p>Mark the steps of heart conduction pathway.</p>	1.5	CO 3
18	<p>Identify the blood cells and write their function.</p> 	1.5	CO 3
19	<p>Sketch a well labelled diagram of nerve cell.</p>	1.5	CO 3
20	<p>Write the different functions of skin.</p>	1.5	CO 3

Section B
(4Qx5M=20 Marks)

21	Differentiate with example how negative feedback mechanism leads to homeostasis.	5	CO 4
22	Compare and mention the differences between mitosis and meiosis.	5	CO 4
23	Defend the important role of sympathetic nervous system.	5	CO 3
24	Support and explain of existence of blood grouping.	5	CO 4

Section C
(2Qx15M=30 Marks)

25	<p>In a scientific experiment done on a playing ground, an athlete was tested for blood catecholamine levels. The report is as followed.</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th><i>Test Name</i></th> <th><i>Value</i></th> <th><i>Measure</i></th> </tr> </thead> <tbody> <tr> <td><i>Epinephrine</i></td> <td>131 pg/mL</td> <td>High</td> </tr> <tr> <td><i>Norepinephrine</i></td> <td>1350 pg/mL</td> <td>High</td> </tr> <tr> <td><i>Dopamine</i></td> <td>27 pg/mL</td> <td>High</td> </tr> </tbody> </table> <p>a) Identify the nervous system which utilizes epinephrine? (2.5 marks) b) Draw the chemical structure of epinephrine? (2.5 marks) c) Write the different responses controlled by this nervous system? (10 marks)</p>	<i>Test Name</i>	<i>Value</i>	<i>Measure</i>	<i>Epinephrine</i>	131 pg/mL	High	<i>Norepinephrine</i>	1350 pg/mL	High	<i>Dopamine</i>	27 pg/mL	High	15	CO 2			
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26	<p>The complete blood count report of Naima is provided in the table below.</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th><i>Test Name</i></th> <th><i>Value</i></th> <th><i>Reference</i></th> </tr> </thead> <tbody> <tr> <td><i>Red blood cell count</i></td> <td>2.65 million cells/mcL</td> <td>3.92-5.13 million cells/mcL</td> </tr> <tr> <td><i>Hemoglobin</i></td> <td>9.4 grams/dL</td> <td>11.6-15 grams/dL</td> </tr> <tr> <td><i>White blood cell count</i></td> <td>11,780 cells/mcL</td> <td>3,400 to 9,600 cells/mcL</td> </tr> <tr> <td><i>Platelet count</i></td> <td>3,14,000 cells/mcL</td> <td>157,000 to 371,000 cells/mcL</td> </tr> </tbody> </table> <p>a) Make an inference of what the result indicate? (5 marks) b) Give a brief description the role of various components of blood? (10 marks)</p>	<i>Test Name</i>	<i>Value</i>	<i>Reference</i>	<i>Red blood cell count</i>	2.65 million cells/mcL	3.92-5.13 million cells/mcL	<i>Hemoglobin</i>	9.4 grams/dL	11.6-15 grams/dL	<i>White blood cell count</i>	11,780 cells/mcL	3,400 to 9,600 cells/mcL	<i>Platelet count</i>	3,14,000 cells/mcL	157,000 to 371,000 cells/mcL	15	CO 3
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Section D
(2Qx10M=20 Marks)

27	Illustrate with the help of diagram, the cardiac cycle.	10	CO 2
28	Appraise the concept of structural levels organization of	10	CO 4

	human body.		
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