

PRACTICE SET

End Semester Examination, Dec 2025

Program: BPT

Semester: I

Subject: Physiology I

Subject Code: 23A102

COURSE OUTCOME	Description
CO1	Understand the general physiology of cells.
CO2	Apply the knowledge of blood and muscle in normal functioning of the human body.
CO3	Evaluate the role of specific organs in cardiopulmonary and respiratory system.
CO4	Correlate the applied physiology with the normal functioning.

Section A

(22x 5= 110)

1. Enlist the functions of blood cells. [CO2] (Unit 2) (Remember LOT)
2. Describe the structure and functions of cell membrane. [CO1] (Unit 1) (Understand LOT)
3. Explain the different modes of transport across the cell membrane. [CO1] (Unit 1)
(Understand LOT)
4. Define homeostasis and mention its physiological significance.[CO1] (Unit 1) (Remember LOT)
5. Describe the role of platelets in hemostasis. [CO2](Unit 2) (Understand LOT)
6. Differentiate between isometric and isotonic muscle contractions. [CO2] (Unit 6)
(Understand LOT)

7. Define cardiac output and mention the factors influencing it. [CO3] (Unit 3) (Remember LOT)
8. State the physiological functions of the respiratory system besides gas exchange. [CO3] (Unit 4) (Remember LOT)
9. Describe the mechanics of respiration. [CO3] (Unit 4) (Understand LOT)
10. Define hypoxia and classify its types. [CO4] (Unit 5) (Remember LOT)
11. Explain excitation-contraction coupling. [CO2] (Unit 6)(Understand LOT)
12. List the properties of cardiac muscle. [CO3](Unit 3) (Remember LOT)
13. Describe the structure of neuromuscular junction. [CO2] (Unit 6) (Understand LOT)
14. Explain about the role of Rh factor in transfusion of blood. [CO2] (Unit 2) (Remember LOT)
15. Discuss about artificial respiration. [CO3] (Unit 5) (Understand LOT)
16. Explain about the calculation of heart rate using an ECG. [CO3] (Unit 3) (Apply LOT)
17. Explain about the systemic circulation of the human body. [CO3] (Unit 3) (Understand LOT)
18. Write a short note on the fate of RBC. [CO2] (Unit 2) (Remember LOT)
19. Discuss about the ABO blood group and how we can find out someone's blood group. [CO2] (Unit 2) (Apply LOT)
20. Explain any 2 pathological variations of lymph flow in detail. [CO4] (Unit 3) (Understand LOT)
21. Write a short note on Hypercapnia. [CO4] (Unit 5) (Remember LOT)
22. Write a short note on erythroblastosis fetalis. [CO4] (Unit 2) (Remember LOT)

Section B

(15x 10=150)

23. Explain the different pathways involved in blood coagulation .[CO2] (Unit 2) (Understand LOT)
24. Describe the origin and spread of cardiac excitation through the conducting system. [CO3] (Unit 3) (Understand LOT)
25. Discuss the mechanism of regulation of respiration. [CO3] (Unit 4) (Understand LOT)

26. Explain the process of oxygen and carbon dioxide transport in the blood. [CO3] (Unit 4)(Understand LOT)
27. Discuss the sliding filament theory of muscle contraction. [CO2] (Unit 6) (Understand LOT)
28. Analyse the physiological changes in cardiac output during exercise.[CO4] (Unit 5) (Analyse HOT)
29. Draw a well labeled diagram of an animal cell and write down about any 5 cell organelles. [CO1] (Unit 1) (Remember LOT)
30. Describe in detail about homeostasis and the feedback mechanism involved in it. [CO1] (Unit 1) (Understand LOT)
31. Discuss in detail about the events of cardiac cycle. [CO3] (Unit 3) (Understand LOT)
32. Describe the role of lymphocytes in the development of immunity. [CO2] (Unit 2) (Understand LOT)
33. Analyze the significance of ABO blood group matching before blood transfusion. [CO2] (Unit 2) (Analyze HOT)
34. Draw the structure of the human respiratory system and explain its basic function. [CO3] (Unit 4) (Remember LOT)
35. Evaluate the physiological adjustments made by the respiratory system during deep-sea diving. How does diving affect lung function and gas exchange, and what are the risks involved? [CO3] (Unit 5) (Evaluate HOT)
36. Explain how the fetal and placental circulations differ from those in the adult, and explain how these differences support fetal development. [CO3] (Unit 3) (Understand LOT)
37. Explain about the Oxygen-Hemoglobin dissociation curve along with its graph. [CO3] (Unit 4) (Understand LOT)

Section C

(10x 20=200)

38. Evaluate the mechanisms of blood pressure regulation and disorders related to it. [CO3] (Unit 3)(Evaluate HOT)

39. Evaluate the mechanisms and physiological importance of coronary, cerebral, and fetal circulation.[CO3] (Unit 3) (Evaluate HOT)
40. Analyse the cardio-respiratory adjustments during exercise and in hypoxia. [CO4] (Unit 5) (Analyse HOT)
41. Create a comparative analysis of different types of muscle fibers and their role in physical activity. [CO2] (Unit 6) (Create HOT)
42. Create a flow chart depicting the series of pathological events taking place after an occlusion in the right coronary artery. Add a note on the factors determining coronary circulation and the signs & symptoms of coronary artery disease. [CO4] (Unit 3) (Create HOT)
43. Discuss about the mechanism of blood clotting and the steps involved in hemostasis. How would a malfunction in any of these steps lead to bleeding or clotting disorders? [CO2] (Unit 2) (Analyze HOT)
44. Analyze the physiological significance of the cardiac cycle. Discuss how mechanical events, including systole and diastole, are coordinated and how this affects cardiac output. [CO3] (Unit 3) (Analyze HOT)
45. Analyse the physiological basis of ECG waveforms and interpret how abnormalities in key components (P wave, QRS complex, ST segment, QT interval) can indicate specific cardiac conditions. Support your answer with clinical examples.[CO4] (Unit 3) (Analyze HOT)
46. Evaluate the role of the brainstem, carotid bodies, and partial pressure of oxygen and carbon dioxide in adjusting respiratory function during physical activity.[CO3] (Unit 5) (Evaluate HOT)
47. Evaluate the immune responses involved when a newborn gains antibodies from the mother and when a teenager with a tetanus-prone wound receives tetanus toxoid and tetanus immunoglobulin. Classify each as active or passive immunization and explain their underlying immune mechanisms. Based on this evaluation, justify the clinical use of each immunization strategy. [CO2] (Unit 2) (Evaluate HOT)

Summary Sheet:

CO Wise

CO	Q.No.	Marks
CO1	2,3,4,29,30	35
CO2	1,5,6,11,13,14,18,19,23,27,32,33,41,43,47	140
CO3	7,8,9,12,15,16,17,24,25,26,31,34,35,36,37,38,39,44,46	195
CO4	10,20,21,22,28,40,42,45	90
Total		460

UNIT Wise

UNIT	Q.No.	Marks
1	2,3,4,29,30	35
2	1,5,14,18,19,22,23,32,33,43,47	100
3	7,12,16,17,20,24,31,36,38,39,42,44,45	155
4	8,9,25,26,34,37	50
5	10,15,21,28,35,40,46	75
6	6,11,13,27,41	45
Total		460

BLT Wise

BLT	Q.No.	Marks
LOT	1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23 ,24,25,26,27,29,30,31,32,34,36,37	230
HOT	28,33,35,38,39,40,41,42,43,44,45,46,47	230
Total		460

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Disclaimer: - This is a Practice Set. The Question in End term examination will differ from the Practice set. This Practice set is meant for practice only.