

Human Physiology (P.G.)
[CBCS]
M.Sc. First Semester End Examination-2023
(Regular & Supplementary Paper)
PAPER-101

Full Marks: 40

Time: 02 Hrs

The figures in the right-hand margin indicate marks.

Candidates are required to give their answers in their own words as far as practicable.

Illustrate the answers wherever necessary.

Unit-1

Full Marks 20

[System Physiology]

- 1. Answer any two questions of the following: 2x2= 4**
- a. Differentiate between apoptosis and necrosis. 1+1
- b. Name the virus involved in B-cell malignancy. Mention the particular function of wee-1 Kinase. 1+1
- c. Name two GI hormones with their functions. 1+1
- d. Mention the central location of respiratory center. Name the factors involved in peripheral vasoconstriction. 1+1
- 2. Answer any two questions of the following: 2x4= 8**
- a. Mention the components of microcirculation. What is vascular restriction? 3+1

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- b. What do you mean by respiratory distress? Write a short note on pulmonary embolism. 2+2
- c. What are GPCR? How IP_3 and DAG acts as second messengers? 1+3
- d. What are the steps involved in development of cancer? What are oncogenes?
- 3. Answer any one question of the following: 1x8=8**
- a. (i) Mention the different phases of cell cycle with its checkpoints.
(ii) Briefly explain the role of pneumotaxic and apeustic centre in respiratory regulation. 4+4
- b. (i) Write the peculiarities of renal blood flow with a diagram.
(ii) Mention the causes of cardiac failure. 5+3

Unit - 2

Full Marks 20

[Physiological Chemistry and Metabolism]

- 1. Answer any two questions of the following: 2x2= 4**
- a. What is the importance of Redox potential in biological system? 2
- b. How is compittitive inhibition different from non-compition inhibition 2
- c. State the importance of Ramchandran Plot. 2
- d. What do you mean by microsomal desaturation ? Mention the functions of prostaglandins. 1+1

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- 2. Answer any two questions of the following: 2x4= 8**
- a. Describe the TCA cycle supported by a schematic representation and emphasiozing the potential inhibitations of the TCA cycle. What is Cataplerosis? 3+1
- b. Describe the role of chaperone protein in protein folding. What is meant by ER stress? 3+1
- c. What is meant by cooperation binding of a protein to ligand? State the role of ubiquitin in protein misfolding. 2+2
- d. With a suitable diagram explain the mechanism of protein transport across cell membranes. What is GABA? 3+1
- 3. Answer any one question of the following: 1x8=8**
- a. Describe the mechanism of allosteric modulation of enzyme action. What is sigmoid kinetics of enzyme? What is the significance behind the proteolytic activation of enzymes? 4+1+3
- b. Explain the significance of the protein-energy funnel in protein folding. What are the factors that guide a proper protein folding? 4+4

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