

PG/Physio/3rd Sem/21(CBCS)

2021

## PHYSIOLOGY

**Paper : PHYS - 301 (Core)**

**(Physiological System - III)**

**[CBCS]**

Full Marks : 40

Time : Two Hours

*The figures in the margin indicate full marks.*

*Candidates are required to give their answers*

*in their own words as far as practicable.*

**Instructions : Hand written answers in A4/full scape papers for 3 & 4 marks should not exceed 1 page & 1.5 pages respectively.**

Answer any *five* from the following.

1. Define water diuresis and water intoxication. State the principle of 'Free water clearance test'. How GFR is related to urine concentration? (2+2)+2+2
2. Write down the principle and significance of Saccharin test. State the physiological role of lung surfactant. What is the role of alveolar macrophage in immune function of lungs? (1.5+1.5)+2+3
3. Discuss the role of dorsal respiratory group of nuclei in regulation of respiration. What is 'Hering-Breuer reflex'? State its physiological importance. 4+(2+2)
4. Discuss the location and functions of apneustic center and pneumotaxic center. Write a short note on 'sneezing reflex'. (2+4)+2
5. Discuss the role of respiratory muscles during inspiration and expiration. What are the changes in intrapleural pressure during inspiration? (3+3)+2

6. How does the cardiac impulse propagate from S-A node to the A-V node? Enumerate the types of ion channels in cardiac muscle? Discuss their role in generation of cardiac impulse. 3+2+3
  7. Mention the autonomic innervation of human heart. What is 'vagal escape'? Describe the sympathetic neuronal regulation of cardiac rhythmicity. 3+2+3
  8. Discuss in details the electron microscopic structure of glomerular filtration membrane. Mention the cause of 'Finnis-type necrosis'. 6+2
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