

2025

**M.Sc. 3rd Semester Examination**  
**HUMAN PHYSIOLOGY**

**Paper : PHY - 301**

**(Electrophysiology and Sensory System)**

**Full Marks : 25**

**Time : One Hour**

*The figures in the margin indicate full marks.  
Candidates are required to give their answers  
in their own words as far as practicable.*

**Group - A**

Answer any *two* questions :  $2 \times 2 = 4$

1. "Eustachian tube act as an equalizer during sound transmission" — Briefly justify the statement. 2
2. What is tip link protein? Mention its functions. 1+1
3. What is gustducin? 2
4. What do you mean by atrial fibrillation? 2

**Group - B**

Answer any *two* questions :  $4 \times 2 = 8$

5. How is acoustic stimulation of hair cells responsible for the development of action potential during sound transduction? 4

P.T.O.

( 2 )

6. Describe the structure and functions Superior Olivary Complex as a part of auditory pathway components. 2+2
7. Discuss about the mechanism of regulation of olfactory transduction in olfactory cilium. What is short-term adaptation of olfaction? 3+1
8. Describe the abnormal ventricular conditions that cause axis deviation of heart. 4

**Group - C**

Answer any *one* question : 8×1=8

9. With a suitable diagram describe the role of  $K^+$  circulation for the development of endocochlear potential in auditory system. Briefly describe nature of shearing forces created between the hair cells and the tectorial membrane as a result of basilar membrane displacement. 5+3
10. Discuss the neural basis of discrimination of different odors. Elaborate on the QRS complex of ECG. 4+4

**Internal Assessment : 5 marks**

---