

**M.Sc. 1st Semester Examination, 2024**

**HUMAN PHYSIOLOGY**

( *Community Health* )

PAPER – PHY-104

*Full Marks : 25*

*Time : 1 hour*

**Answer all questions**

*The figures in the right hand margin indicate marks*

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

**GROUP – A**

**Answer any two questions of the following :  $2 \times 2$**

1. What is LDMP ? When this test is performed ? 1 + 1
2. Write down the importance of the hemodialysis technique. State its working principle. 1 + 1

( Turn Over )

( 2 )

3. Write down the principle of a defibrillator. 2
4. What is transistor ? What is MOSFET ? 1 + 1

**GROUP—B**

Answer any *two* questions of the following :  $4 \times 2$

5. With a suitable diagram describe the structure of the telemetry capsule. Mention the specific parts of an audiometer. 3 + 1
6. Describe the internal structure and functions of the transducer or probe. Classify biosensors. 3 + 1
7. Write down the principle of the spectrophotometer. With a suitable diagram, describe the different components of this instrument. 1 + 3
8. What is "Tip potential" of a microelectrode. What is meant by an ideal amplifier ? How an amplifier efficiency can be calculated ? 2 + 1 + 1

( 3 )

GROUP – C

Answer any *one* question of the following :  $8 \times 1$

9. What is diffusion MRI ? Classify different types of MRI. Describe the instrumental design of MRI. State the 3D rendering techniques of CT scan.  $1 + 1 + 4 + 2$
10. Discuss the basic components of a micro-processor-based ECG machine. Write the application of pregelled electrodes in ECG. What is motion artifact ?  $5 + 2 + 1$

[ Internal Assessment – 5 Marks ]

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