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Reg. No.....

Name.....

# M.Sc. (BIOMEDICAL INSTRUMENTATION) DEGREE EXAMINATION FEBRUARY 2024

## First Semester

BMI 102—INTRODUCTION TO ANATOMY, PHYSIOLOGY AND BIO-MEDICAL INSTRUMENTATION

(2023 Admissions – Regular / 2020–22 Admissions – Supplementary / 2019 Admissions – First Mercy Chance / 2018 Admissions – Second Mercy Chance / 2017 Admissions – Final Mercy Chance)

Time : Three Hours | Maximum Marks : 100

*Draw diagrams wherever necessary.*

### Part A (Introduction to Anatomy)

*Answer any* **five** *questions.*
*Each question carries* 5 *marks.*

1. Explain with diagram the structure of liver.
2. Draw the structure of large intestine and explain.
3. Explain the structure of lungs with diagram.
4. Explain the structure of kidney with diagram.
5. Explain with definition and structure, the Chromosomes.
6. Draw the DNA diagram and explain the structure.

(5 × 5 = 25)

### Part B (Introduction to Physiology)

*Answer any* **five** *questions.*
*Each question carries* 5 *marks.*

1. Explain hypoxin with its different tapes in detail.
2. Explain the functions of heart.
3. Discuss the composition and functions of blood cells.
4. Explain the functions of cerebellum and hypo-thalamus.
5. Explain the methods of hormonal - long term regulation of arterial pressure.
6. Explain the functions of ovary and tests.

(5 × 5 = 25)

**Turn over**

## Part C (Introduction to Biomedical Instrumentation)

*Answer any* **three** *questions.*
*Each question carries* 10 *marks.*

I. 1 Discuss the modes of transport of substances across the cell membranes.

2 Explain with diagram the electrical activity of heart.

3 Explain with diagram the different types of electrodes for the measurement of ECG and EEG.

4 Draw the block diagram of a digital storage oscilloscope and explain with uses.

(3 × 10 = 30)

## Part D

*Answer any* **four** *questions.*
*Each question carries* 5 *marks.*

II. 1 Discuss the carriers in BMI.

2 Explain the terms resting membrane potential, action potential, polarization and repolarization.

3 Explain the electrical activity of muscles.

4 Explain the LED and LCD displays with uses.

5 Explain with circuit the difference and instrumentation amplifiers. Compare their performance.

(4 × 5 = 20 marks)