

B.Sc. Semester - 3 (NEP-2020) Examination

OCT/NOV-2024

PHY: Fundamentals of AC Electronics (Major-6)

Time: 2:00 Hours

Marks: 50

Instructions:

1. All questions are compulsory.
 2. Figures to the right indicate marks.
-

Que-1 Answer any 2 out of 3 following questions. (10)

- 1) Discuss power in the AC circuit.
- 2) Discuss L-R circuit.
- 3) Discuss the LCR parallel circuit with resonance.

Que-2 Answer any 2 out of 3 following questions. (10)

- 1) Explain Wheatstone Bridge.
- 2) Discuss in brief Kohlraush's bridge.
- 3) Discuss Maxwell's LC bridge.

Que- 3 Answer any 2 out of 3 following questions. (10)

- 1) Discuss sinusoidal oscillators and types of sinusoidal oscillations.
- 2) With a neat diagram explain Colpitt's oscillator.
- 3) Discuss the principle of the phase shift oscillator.

Que- 4 Answer any 2 out of 3 following questions. (10)

- 1) Explain the Multimeter as an ohmmeter.
- 2) Discuss the construction of the Cathode Ray Tube (CRT).
- 3) Discuss various controls of the Cathode Ray Oscilloscope (CRO).

Que- 5 Answer any 5 out of 8 following questions (10)

- 1) Explain in brief: the choking coil.
- 2) Discuss in brief the sharpness of resonance in LCR series circuit.
- 3) Draw a neat diagram of the impedance bridge with notations.
- 4) Which bridges are used for the measurement of capacitance?
- 5) What is the mathematical explanation of the Barkhausen criterion?
- 6) Discuss the essentials of transistor oscillators.
- 7) What is the deflection sensitivity of CRT?
- 8) What are the merits and demerits of Multimeter?
