

Stanley College of Engineering & Technology for Women (A)

B.E (IT) I Semester (Main) Examinations-March-2023

Basic Electrical and Electronics Circuits

Time: 03 Hours

Max. Marks: 60

- Note:**
- First Question is Compulsory. Answer any Four out of remaining Six questions.
 - Answer to each question must be written at one place only and in the same order as they occur in the Question paper.
 - Missing data, if any, may be suitably assumed.

Part-A

6X2=12M

- Define linear and nonlinear elements. [2M CO1 BTL1]
 - State Ohm's law and give an example. [2M CO1 BTL2]
 - What is meant by apparent power? [2M CO2 BTL1]
 - Draw the circuit of full wave bridge rectifier with load. [2M CO3 BTL2]
 - Compare CE and CB characteristics of a transistor. [2M CO4 BTL4]
 - Classify the various negative feedback amplifiers. [2M CO5 BTL3]

Part-B

4X12=48M

- State and explain Kirchhoff's laws. [5M CO1 BTL2]
 - State and explain superposition theorem. [7M CO1 BTL2]
- Derive the expressions for average value, RMS value peak factor and form factor for a sinusoidal wave form. [8M CO2 BTL4]
 - A resistance of 60Ω is connected in series with a pure inductor of 350 mH. The circuit is connected across a 50 Hz sinusoidal supply and the voltage across resistance is 150V. Calculate the supply voltage. [4M CO2 BTL3]
- Explain how a p-n junction is formed and state its properties under no bias, forward bias and reverse bias condition. [7M CO3 BTL5]
 - Explain the operation of center tapped full wave rectifier with neat diagram. [5M CO3 BTL5]
- Differentiate between NPN and PNP transistor construction and operation and discuss the input and output characteristics of the transistor in CE, CB and CC configuration. [12M CO4 BTL4]
- What are the advantages of negative feedback amplifiers? Explain them. [6M CO5 BTL1]
 - What are ideal Op-Amp characteristics? [6M CO5 BTL1]
- Explain the operation of RC phase shift Oscillator with a neat circuit diagram. [6M CO5 BTL2]
 - Describe the operation of n-channel JFET with neat sketches and waveforms. [6M CO4 BTL2]