CBCS SCHEME

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18EC36

Third Semester B.E. Degree Examination, Dec.2024/Jan.2025
Power Electronics and Instrumentation

Time: 3 hrs. Max. Marks: 100

Note: Answer any FIVE full questions, choosing ONE full question from each module.

Module-1

1 a. Interpret the control and gate characteristics of SCR with circuit diagrams and waveforms. **(10 Marks)**

b. Illustrate RC triggering circuits with neat waveforms. **(10 Marks)**

OR

2 a. With a neat circuit diagram explain class A commutation circuit. **(10 Marks)**

b. Summarize U.J.T. triggering **(10 Marks)**

Module-2

3 a. Illustrate with neat diagram and waveform of Bridge controlled rectifiers with R and RL load. **(10 Marks)**

b. Explain step up / down chopper with neat circuit diagram and waveforms. **(10 Marks)**

OR

4 a. Illustrate with neat diagram and waveform of full wave controlled rectifiers with RL load. **(10 Marks)**

b. Explain with neat diagram and waveforms Half wave controlled rectifiers with R and RL load. **(10 Marks)**

Module-3

5 a. Explain discontinuous mode of isolated fly back converter with neat circuit diagram and waveforms. **(10 Marks)**

b. Illustrate with waveforms, full bridge inverter with RL load. **(10 Marks)**

OR

6 a. Explain with neat diagram isolated forward converter. **(10 Marks)**

b. Explain the types of static error. Describe briefly the static characteristics of instrumentation. **(10 Marks)**

Module-4

7 a. Explain successive approximation type DVM. **(10 Marks)**

b. Explain in detail the unbalanced Wheatstone's bridge with neat diagram. **(10 Marks)**

OR

8 a. Explain in detail the unbalanced Wein's bridge with neat diagram. **(10 Marks)**

b. Explain function generator with neat block diagram. **(10 Marks)**

Module-5

9 a. Explain the working of LVDT. **(08 Marks)**

b. Describe the structure and operation of PLC. **(12 Marks)**

OR

10 a. With neat diagram explain Resistance Thermometer. **(08 Marks)**

b. Explain the parameters and advantages of transducers. **(12 Marks)**

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