

B.TECH
(SEM V) THEORY EXAMINATION 2022-23
INDUSTRIAL ELECTRONICS

Time: 3 Hours**Total Marks: 100****Note:** Attempt all Sections. If you require any missing data, then choose suitably.**SECTION A****1. Attempt all questions in brief. 2 x 10 = 20**

- (a) Differentiate between Normal and Power MOSFET.
- (b) Define different electronic devices that can be used as a switch.
- (c) Explain the term triggering.
- (d) What is a TRIAC?
- (e) What is the RMS voltage?
- (f) Differentiate between Single and Three Phase.
- (g) What is a transducer?
- (h) Define the term timer.
- (i) Describe the term Telemetry.
- (j) What is the power factor of a circuit?

SECTION B**2. Attempt any three of the following: 10 x 3 = 30**

- (a) Describe the structure and working of an IGBT with neat diagrams.
- (b) Explain different techniques used to protect SCR circuits.
- (c) What is an SMPS? Define the block diagram and working.
- (d) Elaborate different heating systems with their proper applications.
- (e) Discuss different AC and DC drives used in Industrial applications.

SECTION C**3. Attempt any one part of the following: 10 x 1 = 10**

- (a) Describe the switching characteristics of a power transistor.
- (b) Discuss the structure and working of an SCR with neat diagrams.

4. Attempt any one part of the following: 10 x 1 = 10

- (a) Explain the construction and working of Opto-SCR.
- (b) Elaborate the two-transistor model of an SCR.

5. Attempt any one part of the following: 10 x 1 = 10

- (a) Describe the block diagram of a UPS.
- (b) Discuss the working and applications of Feedback Diode.

6. Attempt any one part of the following: 10 x 1 = 10

- (a) Elaborate the working and applications of Servo motor drives.
- (b) Describe the working and applications of Pressure Transducers.

7. Attempt any one part of the following: 10 x 1 = 10

- (a) With the use of a block diagram, define the telemetry system used in Industrial Applications.
- (b) Define different types of Industrial Robots and their applications.