Printed Pages: 01 **Sub Code: KEC - 052**

Paper Id: | 2 | 3 | 1 | 9 | 9 | 6 | **Roll No.** | | | | | | | | | | | | |

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.