PAPER ID-310873

Subject Code: KEC052

Roll No: | | | | | | | | | | | | | |

BTECH
(SEM V) THEORY EXAMINATION 2023-24
INDUSTRIAL ELECTRONICS

TIME: 3 HRS **M.MARKS: 100**

Note: 1. Attempt all Sections. If require any missing data; then choose suitably.

SECTION A

1. Attempt *all* questions in brief. **2 x 10 = 20**

Q no.	Question	Marks	CO
a.	Write down any two applications of power transistors.	2	1
b.	Define latching current.	2	1
c.	Discuss SCR triggering.	2	3
d.	Differentiate opto-TRIAC and opto-SCR.	2	3
e.	Define term average value of voltage.	2	5
f.	Describe the working of feedback diode.	2	2
g.	Describe induction heating.	2	2
h.	Name any two pressure transducer.	2	4
i.	Discuss why power factor control is necessary.	2	4
j.	Discuss about need of data communication in industrial electronics.	2	5

SECTION B

2. Attempt any *three* of the following: **10x3=30**

a.	Explain operation and working of DIAC.	10	1
b.	Describe Construction & Working of Opto- Isolators	10	2
c.	Explain working of relay using opto-SCR with suitable block diagram.	10	3
d.	Explain timer circuit using SCR.	10	4
e.	Explain SCADA with suitable block diagram and applications.	10	5

SECTION C

3. Attempt any *one* part of the following: **10x1=10**

a.	Describe working and constructional features of power transistors.	10	1
b.	Explain construction and working of power MOSFET.	10	1

4. Attempt any *one* part of the following: **10x1=10**

a.	Explain Series and Parallel operation of SCR.	10	2
b.	Describe Construction & Working of Opto-TRIAC.	10	2

5. Attempt any *one* part of the following: **10x1=10**

a.	Explain the concept of freewheeling diode with waveforms.	10	3
b.	Explain single phase bridge inverter circuit with load voltage and load current waveforms.	10	3

6. Attempt any *one* part of the following: **10x1=10**

a.	Explain construction and working of thermos-resistive transducers.	10	4
b.	Explain the working of variable-frequency with construction diagram.	10	4

7. Attempt any *one* part of the following: **10x1=10**

a.	Explain slip power recovery scheme for speed control of AC drive.	10	5
b.	Explain power factor control through solid state devices.	10	5