

B.Tech III Year II Semester (R15) Supplementary Examinations December/January 2018/2019

INDUSTRIAL ELECTRONICS

(Electronics & Communication Engineering)

Time: 3 hours

Max. Marks: 70

PART – A
(Compulsory Question)

- 1 Answer the following: (10 X 02 = 20 Marks)
- What is the difference between intrinsic & extrinsic semiconductor? Give example.
 - State the principle of operation of LED.
 - Give the relation between α and β .
 - Explain how transistor is used as an amplifier.
 - Distinguish between half wave rectifier and full wave rectifier.
 - Give the classification of voltage regulators.
 - List the different types of resistance welding.
 - Explain the principle of dielectric heating.
 - How ultrasonic waves are generated?
 - Define soldering and welding by ultrasonics.

PART – B

(Answer all five units, 5 X 10 = 50 Marks)

UNIT – I

- 2 Explain the working principle of photodiode, its characteristics & applications.

OR

- 3 (a) Briefly explain about avalanche breakdown and Zener.
(b) What is photovoltaic effect? Explain.

UNIT – II

- 4 Draw & explain the input and output characteristic curves of a transistor in CE configuration.

OR

- 5 Compare CE, CC & CB configurations of BJT.

UNIT – III

- 6 Explain the principle of automatic voltage regulation. How Zener diode is used on DC voltage stabilizer.

OR

- 7 Derive an expression for the ripple factor in a full wave rectifier.

UNIT – IV

- 8 Explain the principle of induction heating give its merits.

OR

- 9 State the working principle of resistance welding with diagram. State its advantages, disadvantages & applications.

UNIT – V

- 10 (a) Explain the dispersive & colloidal effect of ultrasonics.
(b) State the properties of ultrasonic waves.

OR

- 11 (a) Explain any two applications of ultrasonics in detail.
(b) Discuss thermal effects of ultrasonics.
