

TED (15) 2041
(Revision-2015)

A20-00465

Reg.No.....
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DIPLOMA EXAMINATION IN ENGINEERING/TECHNOLOGY/
MANAGEMENT/COMMERCIAL PRACTICE, APRIL-2020

BASIC ELECTRONICS

[Maximum marks: 75]

(Time: 2.15 Hours)

PART – A

(Answer any **three** questions in one or two sentences. Each question carries 2 marks)

- I. (1). What are passive components.
(2). Define self inductance.
(3). Define PIV.
(4). What is an intrinsic semiconductor.
(5). $\alpha = \dots\dots\dots$

(3 x 2 = 6)

PART – B

(Answer any **four** of the following questions. Each question carries 6 marks)

- II. (1). Explain the working of a transformer.
(2). What are majority and minority charge carriers.
(3). Define drift and diffusion currents.
(4). Explain the mechanism of current flow in a transistor.
(5). Explain a π section filter circuit.
(6). Explain a full wave voltage doubler circuit.
(7). Draw and explain the graph of an output characteristic curve in CE configuration.

(4 x 6 = 24)

PART – C

(Answer **any of the three units** from the following. Each question carries 15 marks)

UNIT – I

- III. (a). Explain the colour coding of resistors. (8)
(b). Explain the charging and discharging of capacitors. (7)

OR

- IV. (a). Describe ultra capacitor and chip capacitor. (8)
(b). List the different types of inductors and write their applications. (7)

UNIT-II

- V. (a). Draw and explain the energy band diagram of conductors, insulators and semi conductors. (7)
(b). Explain the breakdown in p-n junction. (8)

OR

- VI. (a). Explain the varactor diode and tunnel diode. (8)
(b). Draw and explain the V-I characteristics of a diode in forward biased condition. (7)

UNIT-III

- VII. (a). Explain the working of a positive and negative clipper circuit. (8)
(b). Calculate the ripple factor of a half wave rectifier. (7)

OR

- VIII.(a). Explain the working of a bridge rectifier and draw the waveforms with and without filter circuits. (8)
(b). Compare half wave, centre tapped and bridge rectifier circuits. (7)

UNIT-IV

- IX. (a). Explain the working principle of an n-p-n transistor. (8)
(b). Prove the relation between α , β and γ (7)

OR

- X. Explain the input and output characteristic of BJT in CB configuration and identify the three regions. (15)