

SECOND SEMESTER DIPLOMA EXAMINATION IN ENGINEERING/
TECHNOLOGY— MARCH, 2015

BASIC ELECTRONICS

(Common for EL, EC, EA, EP, CT, CM, IF, AE, TC, BM and MD)

[Time : 3 hours

(Maximum marks : 100)

PART—A

(Maximum marks : 10)

Marks

I Answer all questions in one or two sentences. Each question carries 2 marks.

1. Write any two specification of resistor.
2. Draw the symbol of varactor and tunnel diode.
3. Define the term rectification efficiency.
4. Why base current of transistor is smaller than collector or emitter current ?
5. What do you mean by clamper ? (5×2=10)

PART—B

(Maximum marks : 30)

II Answer *any five* of the following questions. Each question carries 6 marks.

1. Explain the construction and working of Electrolytic capacitor.
2. Explain Zener break down.
3. With suitable diagram explain half wave rectifier.
4. Draw the symbol, equivalent circuit and V-I characteristics of UJT.
5. Explain the working of PNP transistor.
6. Sketch the V-I characteristics of diode and determine its static and dynamic resistance.
7. Explain the colour coding of resistor. (5×6=30)

PART—C

(Maximum marks : 60)

(Answer *one* full question from each unit. Each full question carries 15 marks.)

UNIT—I

- III (a) Explain the different types of fixed resistor. 9
 (b) Explain with diagram Auto transformer. 6

OR

- IV (a) Briefly explain the specification of capacitor. 10
 (b) Define self inductance and mutual inductance. 5

UNIT—II

- V (a) With suitable diagram explain the formation of depletion region in PN junction. 10
 (b) Briefly explain Avalanche effect. 5

OR

- VI (a) Explain with diagram the behavior of PN junction under forward bias condition. 10
 (b) Draw the energy band diagram of conductor, insulator and semi conductor. 5

UNIT—III

- VII (a) With circuit diagram explain full wave voltage doubler. 5
 (b) Explain the working of centre tapped full wave rectifier with suitable diagram. 10

OR

- VIII (a) Derive the equation for ripple factor, average and rms value of current for half wave rectifier. 12
 (b) List the different types of filter. 3

UNIT—IV

- IX (a) Sketch the input and output characteristics of common base configuration. 6
 (b) Derive the relation between α , β and γ . 9

OR

- X (a) With circuit diagram explain the working of transistor as a switch. 7
 (b) Compare the different transistor configuration. 8