

TED (10)–3053

Reg. No.

(REVISION—2010)

Signature

THIRD SEMESTER DIPLOMA EXAMINATION IN ELECTRICAL AND
ELECTRONICS ENGINEERING—OCTOBER, 2011

ELECTRONIC DEVICES AND CIRCUITS

[Time : 3 hours

(Maximum marks : 100)

PART—A

Marks

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

1. Define drift current.
2. Define avalanche break down.
3. Define efficiency of a rectifier.
4. Write the different classes of amplifiers.
5. Write the applications of oscillators.

(5×2=10)

PART—B

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

1. Draw and explain the V.I. characteristics of a zener diode.
2. Analyze a half wave rectifier with wave forms.
3. Show how a combination clipper works.
4. Explain the working of a common base transistor amplifier.
5. Draw and explain positive and negative feedback.
6. Draw and explain astable multivibrator.
7. Show how a Hartley oscillator functions.

(5×6=30)

PART—C

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

UNIT—I

- III (a) Explain the input and output characteristics of common emitter configured transistor. 10
- (b) Differentiate between zener diode and ordinary diode. 5

OR

- IV (a) Derive the amplification factor for the CE configuration and relate it with other configurations. 10
- (b) Explain the behaviour of a forward biased P.N. junction. 5

stationary →

2

Marks

UNIT—II

- V (a) Illustrate how a full wave rectifier having $PIV = V_m$ works. 8
(b) With the help of an inductor filter circuit show how pure DC is obtained from a rectifier. 7

OR

- VI (a) Draw and explain negative and positive shunt clippers. 8
(b) Compare the different types of rectifiers. 7

UNIT—III

- VII (a) Explain the working of negative feed back amplifiers. 7
(b) Explain the working of class A amplifier. 8

OR

- VIII (a) Show how will you bias a transistor to work as an amplifier by voltage divider circuit. 8
(b) Explain the working of a class B amplifier. 7

UNIT—IV

- IX (a) Draw the circuit of a crystal oscillator and explain the working. 7
(b) Explain the working of a colpitts oscillator. 8

OR

- X (a) Explain the working of a monostable multivibrator using transistor. 7
(b) Explain the working of an astable multivibrator using Ic 555. 8

MADIN POLYTECHNIC College