

TED (10) – 3053

Reg. No.

(REVISION —2010)

Signature

THIRD SEMESTER DIPLOMA EXAMINATION IN ELECTRICAL AND
ELECTRONICS ENGINEERING — MARCH, 2015

ELECTRONIC DEVICES AND CIRCUITS

[Time : 3 hours

(Maximum marks : 100)

Marks

PART—A

(Maximum marks : 10)

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

1. Define dynamic resistance.
2. What is a depletion region ?
3. Define voltage regulation.
4. Define amplification.
5. Write application of Schmitt trigger.

(5x2=10)

PART—B

(Maximum marks : 30)

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

1. Draw and explain VI characteristics of PN junction diode.
2. Explain the working of NPN transistor.
3. Compare different types of rectifiers.
4. Draw and explain double ended clipper.
5. List advantages and disadvantages of transformer coupled amplifier.
6. Which type of feedback is used in amplifiers ? Why ?
7. State Backhausen's criterion.

(5x6=30)

PART—C

(Maximum marks : 60)

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

UNIT – I

- III (a) Define α and β . Derive the relation between α and β . 8
 (b) Explain about DC load line. 7

OR

- IV (a) Explain the working of zener diode with figure. 8
 (b) Explain the output characteristics of common emitter NPN transistor. Label and explain the three operating regions over it. 7

UNIT – II

- V (a) Explain full wave bridge circuit with waveforms. 8
 (b) Explain about π filter and write any two advantages. 7

OR

- VI (a) Describe the working of positive and negative clamping circuits with figures. 8
 (b) Explain about choke input LC filter and write any advantage. 7

UNIT – III

- VII (a) Explain the working of push pull amplifier. 8
 (b) Explain the working principle of transformer coupled amplifier with figure. 7

OR

- VIII (a) Draw and explain the frequency response of RC coupled amplifier. 8
 (b) Explain the working of class A amplifier. 7

UNIT – IV

- IX (a) Explain the working of monostable multivibrator. 8
 (b) Draw neat diagram of colpitts oscillator and explain. 7

OR

- X (a) Explain the working of astable multivibrator using IC 555. 8
 (b) Draw and explain crystal oscillators. 7