TED (10)–3053

(REVISION—2010)

Reg. No. .....

Signature .....

THIRD SEMESTER DIPLOMA EXAMINATION IN ELECTRICAL AND ELECTRONICS ENGINEERING—MARCH, 2013

ELECTRONIC DEVICES AND CIRCUITS

[*Time* : 3 hours

(Maximum marks : 100)

Marks

PART—A

(Maximum marks : 10)

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

1. What is meant by diffusion current ?
2. List out any two applications of a diode.
3. Define the peak inverse voltage.
4. Define faithful amplification.
5. State two conditions for the sustained oscillation.

(5x2=10)

PART—B

(Maximum marks : 30)

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

1. Compare the ordinary diode with zener diode.
2. Analyse the working of a diode as a rectifier.
3. Illustrate the wave forms of a full wave rectifier with a capacitor filter.
4. Draw the circuit diagram of a bridge rectifier.
5. Write any three applications of Schmitt trigger circuit.
6. List out the various types of couplings of amplifiers.
7. Differentiate class A and class B amplifiers.

(5x6=30)

PART—C

(Maximum marks : 60)

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

UNIT – I

III (a) Illustrate the reverse characteristic of a zener diode. 8

(b) Explain the working of a transistor as an amplifier. 7

OR

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Marks

IV (a) Establish the relation between the β and α in a transistor. 7

(b) Draw the common emitter amplifier circuit using a transistor and explain the phase reversal in the output. 8

UNIT – II

V (a) Compare half wave and full wave rectifiers. 8

(b) Explain the working of a regulator using 7805 IC. 7

OR

VI (a) What is a clipping circuit ? Explain the working of a positive shunt clipper using diode. 8

(b) Explain the working of a capacitor filter in a rectifier circuit. 7

UNIT – III

VII (a) Draw the circuit of a push pull amplifier and explain its working. 8

(b) Explain the operation of a single stage power amplifier. 7

OR

VIII (a) Explain the working of a complementary-symmetry push pull amplifier with a neat circuit diagram. 8

(b) Draw the frequency response of a RC coupled amplifier and mark various points on it. 7

UNIT – IV

IX (a) With the help of a circuit diagram, explain the working of a Hartley oscillator. 8

(b) Describe the working of an astable multivibrator circuit using transistors. 7

OR

X (a) Describe the operation of a RC phase shift oscillator with a neat circuit diagram. 8

(b) Develop an astable multivibrator circuit using 555 timer IC. 7
