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TED (15) – 3044

(REVISION — 2015)

Reg. No.....

Signature .....

DIPLOMA EXAMINATION IN ENGINEERING/TECHNOLOGY/ MANAGEMENT/COMMERCIAL PRACTICE — APRIL, 2019

ELECTRONIC DEVICES AND CIRCUITS

[*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. List different methods of inter stage coupling in amplifiers.
2. Write an expression for resonant frequency of resonant circuits.
3. Define piezo electric effect.
4. State Barkhausen criterion for oscillation.
5. List types of negative feedback in amplifiers. (5×2 = 10)

PART — B

(Maximum marks : 30)

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

1. Explain emitter follower with the help of diagram.
2. Explain the effects of negative feedback in amplifiers.
3. Compare BJT and FET.
4. Explain importance of impedance matching in power amplifier.
5. Draw the circuit diagram of direct coupled amplifier and explain.
6. Explain importance of heat sink in power amplifier.
7. Draw and explain RC differentiating circuit with waveforms. (5×6 = 30)

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Marks

PART — C

(Maximum marks : 60)

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

UNIT — I

III (a) Explain the principle of operation of transistor amplifier in Common emitter configuration. 8

(b) Explain frequency response of RC coupled amplifier. 7

OR

IV (a) Write expression for voltage gain, current gain, power gain, input and output impedances of common emitter amplifier. 8

(b) Draw and explain transformer coupled amplifier. 7

UNIT — II

V (a) Draw and explain the circuit of complimentary push pull amplifier. 8

(b) Explain frequency response of single tuned amplifier and write Relation between resonant frequency, bandwidth and Q factor. 7

OR

VI (a) Classify power amplifiers with the help of proper diagrams. 8

(b) Draw and explain single tuned amplifier circuit. 7

UNIT — III

VII (a) Derive an expression for feedback in amplifiers. 8

(b) Explain the working principle of JFET. 7

OR

VIII (a) Explain the types of negative feedback in amplifiers with the help of diagrams. 8

(b) Draw and explain UJT relaxation oscillator. 7

UNIT — IV

IX (a) Explain the working of RC phase shift oscillator with the help of diagram. 7

(b) Explain the working of Schmitt trigger with the help of Circuit diagram and waveforms. 8

OR

X (a) Draw and explain Hartley oscillator. 7

(b) Explain the operation of transistor astable multivibrator with the help of circuit diagram and waveforms. 8