TED (10) – 3058

(REVISION — 2010)

DIPLOMA EXAMINATION IN ENGINEERING/TECHNOLOGY/ MANAGEMENT/COMMERCIAL PRACTICE — OCTOBER, 2017

ELECTRONIC 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. Define operating point.

2. Write the relation between bandwidth and Quality factor.

3. State Barkhausen criterion.

4. Write the conditions for an integrator.

5. State the importance of heat sink.   (5 × 2 = 10)

PART — B

(Maximum marks : 30)

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

1. Write the features and applications of emitter follower.

2. Compare RC coupled amplifier and transformer coupled amplifier.

3. Compare voltage amplifier and power amplifier.

4. With a neat diagram explain the working of crystal oscillator.

5. Explain how negative feedback affects the bandwidth and gain stability.

6. Explain how RC circuit can be used as a differentiator.

7. Compare JFEF and BJT.   (5 × 6 = 30)

[P.T.O.

[114]

Marks

PART — C

(Maximum marks : 60)

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

UNIT — I

III (a) Plot the frequency response of an RC coupled amplifier and explain.   8

   (b) With a neat diagram explain the working of transformer coupled amplifier.   7

OR

IV (a) Plot the circuit of a single stage amplifier and explain the functions of each component.   8

   (b) Explain voltage divider biasing.   7

UNIT — II

V (a) Explain the working of a single tuned amplifier with a neat circuit.   8

   (b) Write the importance of impedance matching in power amplifier.   7

OR

VI (a) Explain the operation of class B pushpull amplifier with a neat circuit diagram.   9

   (b) A series resonent circuit consists of a capacitor of 100 micro farad and an inductance of 100 micro Henry. If the series resistor is 10Ω, find Q factor and Bandwidth.   6

UNIT — III

VII (a) Explain the working of Hartley oscillator and write the equation for frequency of oscillation.   8

   (b) Explain the working of RC phase shift oscillator with a neat circuit diagram.   7

OR

VIII (a) Explain the operation of Wein bridge oscillator with a neat diagram.   8

   (b) With a neat circuit explain the working of Colpitt's oscillator.   7

UNIT — IV

IX (a) Explain the working of astable multivibrator with waveforms.   8

   (b) Define FET parameters and derive the relationship between them.   7

OR

X (a) Explain the operation of Schmitt trigger with a neat circuit diagram.   8

   (b) With a neat circuit diagram explain the working of bistable multi vibrator.   7

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