TED (15) – 2041

(REVISION — 2015)

Reg. No. .....

Signature .....

DIPLOMA EXAMINATION IN ENGINEERING/TECHNOLOGY/ MANAGEMENT/COMMERCIAL PRACTICE — APRIL, 2018

BASIC ELECTRONICS

(Maximum marks : 100) [*Time* : 3 hours

PART — A

(Maximum marks : 10)

Marks

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

1. Give two examples for Active and Passive components.
2. Define doping.
3. Define PIV.
4. Draw the circuit diagram of π section filter.
5. Draw the symbol of NPN and PNP Transistor.

(5×2 = 10)

PART — B

(Maximum marks : 30)

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

1. Briefly explain the specifications of resistors.
2. Briefly explain the colour coding associated with resistors and illustrate with examples.
3. Explain zener and avalanche breakdown.
4. Explain the working of Tunnel diode.
5. Draw and explain the working of half wave rectifier.
6. Briefly explain the output characteristics of CB configuration.
7. Explain the working principle of PNP and NPN transistor.

(5×6 = 30)

Marks

PART — C

(Maximum marks : 60)

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

UNIT — I

III (a) (i) What is a capacitor and draw its symbol. 2

(ii) Find the effective resistance of the given fig (1) and fig (2).

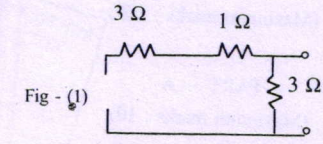

Fig - (1)

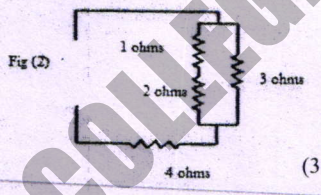

Fig (2)

(3 + 4 = 7)

(b) Explain the charging and discharging of a capacitor with neat diagram. 6

OR

IV (a) Define self and mutual inductance. List the different types of inductors and their applications. 8

(b) Explain the working of transformer and give their applications. 7

UNIT — II

V (a) Explain the intrinsic and extrinsic semiconductors and give examples. 8

(b) Explain the principle of operation of PN Junctrion diode with neat diagram. 7

OR

VI (a) Explain the working of zener diode and draw V-I characteristics of zener diode. 9

(b) Define :

(i) Knee voltage. 2

(ii) Static resistance. 2

(iii) Dynamic resistance. 2

UNIT — III

VII (a) Draw the circuit of a Full wave bridge rectifier and explain its working with the help of waveforms. 9

(b) Compare Half Wave, Full Wave and Bridge rectifiers. 6

OR

VIII (a) Draw and explain the working of Full wave voltage doublers. 8

(b) Draw and explain the working of combination clipper. 7

UNIT — IV

IX (a) Compare the characteristics of the three BJT configurations. 8

(b) Draw and explain the input characteristics of CE configuration. 7

OR

X (a) Derive the relation between α, β and γ. 8

(b) Explain the leakage current of transistor. 7

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