



TED (10) – 3001

Reg. No. ....

(REVISION – 2010)

Signature .....

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

**BASIC ELECTRONICS**

[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. Write the expression for capacitance.
2. Define diffusion current.
3. Define PIV of a diode.
4. List different types of filter circuits used with rectifiers.
5. Draw the symbols of npn and pnp transistors.

(5×2 = 10)

**PART — B**

(Maximum marks : 30)

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

1. Describe the specifications of capacitor.
2. Determine the static resistance of a diode from its VI characteristics.
3. Explain VI characteristics of zener diode.
4. Describe the disadvantages of centre tapped type full wave rectifier.
5. Explain the working of shunt positive peak clipper circuit.
6. Compare the characteristics of CE and CB configurations of BJT.
7. Draw and explain the equivalent circuit of UJT.

(5×6 = 30)



**PART — C**  
(Maximum marks : 60)

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

**UNIT — I**

- III (a) Describe the specification of resistors. 6
- (b) Write short notes on :
- (i) Electrolytic capacitor 3
  - (ii) Self inductance 3
  - (iii) Different types of transformers 3

OR

- IV (a) Explain colour coding of resistors. 9
- (b) List the specifications of capacitors. 6

**UNIT — II**

- V (a) Write short notes on :
- (i) Intrinsic and extrinsic semiconductors 3
  - (ii) Potential barrier across a PN junction 3
  - (iii) Zener diode 3
- (b) Explain the working of tunnel diode. 6

OR

- VI (a) Sketch and explain the energy band diagrams of conductor insulator and semiconductor. 9
- (b) Describe the working of varactor diode. 6

**UNIT — III**

- VII (a) Compare half wave, centre tapped and bridge rectifiers. 9
- (b) Explain the working of a positive clamper circuit with waveforms. 6

OR

- VIII (a) Derive an expression for the RMS value of the output voltage and calculate the ripple factor of a full wave rectifier circuit. 9
- (b) Explain the working of a shunt capacitor filter circuit. 6

**UNIT — IV**

- IX (a) Plot and explain the input and output characteristics of a transistor connected in CB configuration. 10
- (b) Describe the construction of UJT. 5

OR

- X (a) Explain the regions of operation of BJT. 6
- (b) Plot and explain the VI characteristics of UJT. 9