

TED (15/19) - 2041
(REVISION-2015/19)

N21-00984

Reg.No.....

Signature.....

**DIPLOMA EXAMINATION IN ENGINEERING/TECHNOLOGY/MANGEMENT/
COMMERCIAL PRACTICE - NOVEMBER 2021**

BASIC ELECTRONICS

(Maximum Marks:75)

(Time: 2¼ hours)

PART - A

Marks

- I. Answer **any three** questions in one or two sentences. Each question carries 2 marks.
1. Give two applications of Transformer.
 2. List two specification of inductor.
 3. Explain diffusion current.
 4. List different types of filter circuits used with rectifiers.
 5. Draw the symbol of NPN and PNP Transistor (3 x 2 = 6)

PART - B

- II Answer **any four** of the following questions. Each question carries 6 marks.
1. Describe the specifications of capacitor
 2. Draw and explain the energy band diagram of conductors, semiconductors and insulators.
 3. Draw the VI characteristics of a tunnel diode and explain.
 4. Explain the working of a π – section filter circuits and state the advantages.
 5. Define the terms TUF, ripple factor and efficiency with respect to a rectifier.
 6. Draw the output characteristics of a Transistor in CB configuration and explain.
 7. Derive the relation between α (alpha) and β (beta) of a Transistor (4 x 6 = 24)

PART – C

(Answer **any of the three units** from the following. Each full question carries 15 marks.)

UNIT - I

- III (a) Identify the areas of application of Electronics (7)
- (b) What are the different types of Variable resistor? State the applications of each (8)

OR

- IV (a) Explain Ultra capacitor and list its advantages (9)
(b) List different types of inductors and specify their applications (6)

UNIT – II

- V (a) Explain the construction of N-type semiconductor (9)
(b) Draw and explain zener diode voltage regulator (6)

OR

- VI (a) Explain the formation of PN junction and depletion region (9)
(b) Describe the operation of a varactor diode (6)

UNIT – III

- VII (a) Draw the circuit of a bridge rectifier and explain the working with waveforms. (9)
(b) Explain the operation of positive clipper with circuit and wave form (6)

OR

- VIII (a) Explain the operation of positive clamper with circuit and waveform (9)
(b) Draw and explain a full wave voltage doubler circuit (6)

UNIT – IV

- IX (a) Draw the structure and explain the operation of NPN Transistor (6)
(b) Draw the output characteristics of a Transistor in CE configuration and explain different regions (9)

OR

- X (a) Draw the different configurations of BJT and compare the performances (9)
(b) Discuss the input and output resistance of transistor in CB configuration (6)

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