

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. Name two specifications of capacitors.
2. Give any two applications of transformer.
3. Define Potential barrier.
4. Draw the wave form of Half Wave Rectifier.
5. Draw the physical structure of BJT.

(5×2 = 10)

PART — B

(Maximum marks : 30)

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

1. Colour band sequence on a resistor is yellow, violet and red. What is the resistance value ? Define resistor and draw its symbol.
2. Explain the majority and minority carriers in P and N type materials.
3. Explain the working of diode as a switch.
4. Draw and explain the working of negative clipper.
5. Draw and explain the working of half wave voltage doubler.
6. Briefly explain the input characteristics of CB configuration.
7. Briefly explain the input characteristics of CE configuration.

(5×6 = 30)

## PART — C

Marks

(Maximum marks : 60)

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

## UNIT — I

- III (a) Give the different types of fixed resistors and list the applications of variable resistors. 8  
 (b) Find the effective capacitance of the fig. 1 and fig. 2.

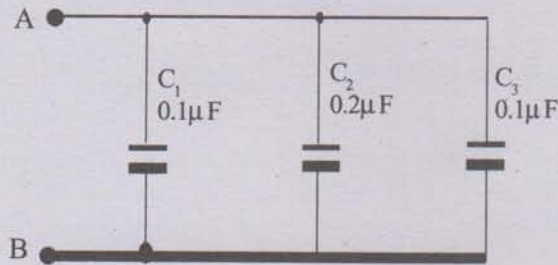


Fig. 1

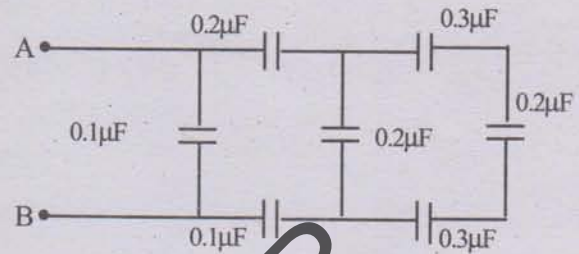


Fig. 2

(3+4)

OR

- IV (a) Briefly explain ultra capacitor and give its applications. 8  
 (b) List the different types of capacitors. 7

## UNIT — II

- V (a) Draw and explain energy band diagram. 6  
 (b) Explain the forward and reverse characteristics of PN junction diode. 9

OR

- VI (a) Explain the working of Varactor diode and give the application of Varactor diode. 9  
 (b) Explain the advantages and applications of Tunnel diode and draw the Symbol of Tunnel diode. 6

## UNIT — III

- VII (a) Draw the circuit of a Full wave rectifier and explain its working with the help of waveforms. 8  
 (b) Draw and explain the positive clamper circuit with the help of Waveforms. 7

OR

- VIII (a) Draw the circuit of a Half wave rectifier and explain its working with the help of waveforms. 8  
 (b) Draw and explain the positive clipper circuit with the help of Waveforms. 7

## UNIT — IV

- IX (a) Draw and explain the output characteristics of CB configuration. 8  
 (b) Draw and explain the physical structure of BJT. 7

OR

- X (a) Draw and explain the output characteristics of CE configuration. 9  
 (b) Briefly explain the mechanism of current flow in transistor. 6