

MODEL QUESTION PAPER  
SECOND SEMESTER DIPLOMA EXAMINATION  
BASIC ELECTRONICS  
(Common to EL,EC & BM)  
(Maximum Marks:100)

Time : 3 Hrs

PART A

(Answer the following questions in one or two sentences)

Marks

- 1.1. Differentiate active and passive components
  2. Mention the colour band for 1 ohm resistance
  3. Define intrinsic semiconductor
  4. Draw the o/p wave form of fullwave rectifier without filter
  5. Draw the symbols of NPN & PNP transistor
- (5 x 2 = 10)

PART B

(Answer any five questions. Each question carries 6 marks)

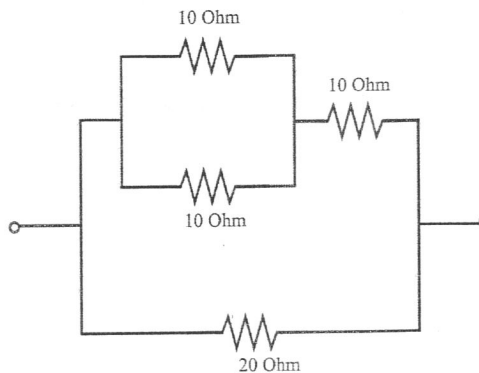
- II.1. Explain with neat diagram working of a transformer
  2. Describe with necessary diagram the working of PN junction and explain how depletion region is forming
  3. With neat diagram explain the working of a half wave rectifier and draw the various wave forms with and without capacitor filter
  4. Illustrate the working of positive voltage clamper with necessary diagram
  5. Draw the common emitter configuration of NPN transistor. Also draw its o/p characteristics?
  6. Explain the classification of resistors according to their function?
  7. Describe the working of zener voltage regulator?
- (5 x 6 = 30)

Part C

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

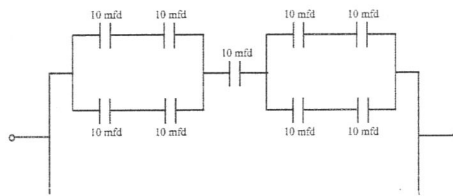
UNIT I

- III.a Describe different type of capacitor used in electronics circuit 6
- b. Find out the total resistors for the following combination 9



OR

- IV. a. Define resistance ,capacitance and inductance 6  
b. Mention the use of Inductor and capacitors in electronics circuit 4  
c. Find out the effective capacitance for the following combinations 5



## UNIT II

- Va. Draw and explain energy band diagram of conductors, insulators and semiconductors 10  
b. Draw the VI characteristics PN junction diodes and mark the knee voltage ,find out the dynamic and static resistance. 5

OR

- VI. a. Explain with necessary diagram ZENER diode characteristics.and why its used a voltage regulation 10  
b. Mention the application of tunnel diode and varactor diode 5

## UNIT III

- VII. a Explain with neat diagram the working of full wave bridge rectifier with filter 11  
b. Write down the ripple factor of half wave and full wave rectifiers 4

OR

- VIII.a.Draw and explain centre tapped full wave rectifier with necessary wave forms. 10  
b. Define the term TUF, ripple factor and rectification effinceincy 4

## UNIT IV

- IX a Explain the working of BJT 8  
b. Draw the CB configuration of PNP Transistor and explain 7

OR

- X a Derive the relationship between  $\beta$  and  $\alpha$  6  
b. Compare the feacturs of various transistors combination 9

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