Unit III

6. (a) Realize NAND and NOR gate with the help of switch and lamp logic. **5**

(b) Convert the following :

$(248.CF3)_{16} = (\quad)_2$

$(348.28)_8 = (\quad)_{10}$ **5**

(c) Realize EX-OR gate with only four NAND gates. **5**

7. (a) Draw and explain the block diagram of multimeter. **7½**

(b) Draw and explain the block diagram of CRO. **7½**

Unit IV

8. (a) Why do we require modulation ? Explain how AM takes place. **7½**

(b) Compare FM and PM. **7½**

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B3

B.Tech. EXAMINATION, May 2019

(Second Semester)

(B. Scheme) (Re-appear Only)

ECE102B

BASICS OF ELECTRONICS ENGINEERING

(Common with all Branches)

Time : 3 *Hours*] [*Maximum Marks :* 75

Before answering the question-paper candidates should ensure that they have been supplied to correct and complete question-paper. No complaint, in this regard, will be entertained after the examination.

Note : Attempt *Five* questions in all. Q. No. **1** is compulsory. Attempt any *four* from remaining eight and at least *one* question from each Unit.

1. (a) Differentiate between extrinsic and intrinsic semiconductor on the basis of fermi level.

(b) How does Hall's effect help in distinguishing between extrinsic P-type and N-type semiconductor ?

(c) How two diodes connected back to back gives rise to a transistor ?

(d) What are the paramters of a voltage regulators ?

(e) Why do interrupt 5.5, 6.5 and 7.5 are given names in decimals ? **5×3=15**

Unit I

2. (a) If two diodes are connected back to back across a battery of 10 V and a resistance of 100 Ω ? Then find voltage across each diode if they are :

(i) Both are forward based

(ii) Both are reverse based

(iii) Connected back to back. **7½**

(b) Explain the working of half wave rectifier. Derive expression for V_{dc} and V_{rms}. **7½**

3. (a) Draw and explain O/P characteristics of CB configuration. Explain what is early effect ? **7½**

(b) What are current comonents in a transistor ? Explain by using C.B. (PNP) configuration. **7½**

Unit II

4. (a) Realize OP Amp in Inverting mode as Summer, Averager and Scaling Amplifier. **7½**

(b) Draw and explain working of differential amplifier. **7½**

5. (a) Explain the working of SMPS with the help block diagram. **7½**

(b) Draw and explain the working of voltage regulator. **7½**

9. Write short notes on the following :

(a) Interrupt structure of 8085 **7½**

(b) Instructions :

(i) LDAX

(ii) STA

(iii) XCHG

Complete the format and explain in detail. **7½**

9. Write short notes on the following :

(a) Interrupt structure of 8085 **7½**

(b) Instructions :

(i) LDAX

(ii) STA

(iii) XCHG

Complete the format and explain in detail. **7½**