

B. Tech. (ME) 3<sup>rd</sup> Semester G-Scheme

Examination, December-2024

**BASICS OF ELECTRONICS ENGINEERING**

**Paper-ESC-ECE-207-G**

Time allowed : 3 hours]

[Maximum marks : 75

*Note : Attempt five questions in all, selecting one question from each unit. Question No. 1 is compulsory. All questions carry equal marks.*

1. (a) What do you mean by conductors?
- (b) What are the disadvantages of negative feedback?
- (c) Draw the block diagram of 8:1 multiplexer?
- (d) What is the need of feedback in amplifier?
- (e) What is Barkhausen's criteria for oscillations?
- (f) What is the need of biasing?

6×2.5=15

**Unit-I**

2. (a) What is a PN Junction? Draw its V-I characteristics in different bias configuration. 10
- (b) Find out the rectification efficiency in full wave rectifier. 5
3. (a) Draw the circuit diagram of a CB amplifier and explain its input output characteristics. 10

- (b) What is frequency response curve for an amplifier and find out its Bandwidth? 5

### Unit-II

4. Write short note on : 15
- (a) Non-inverting amplifier
  - (b) Inverting amplifier
5. (a) Explain ideal op-amp characteristics in detail. 7.5
- (b) What are the effects of negative feedback in case of op-amp? 7.5

### Unit-III

6. Explain the working of RC phase shift oscillator using NPN transistor. 15
7. (a) Draw and explain the working of a Wien bridge oscillator. 10
- (b) Explain mono stable multivibrator in detail. 5

### Unit-IV

8. Explain universal property of gates in detail. 15
9. Explain the following : 15
- (a) GSM system
  - (b) Elements of communication system