

Roll No.

3058

**B. Tech. 3rd Semester (ME)
Examination – December, 2022**

BASICS OF ELECTRONICS ENGG.

Paper : ESC-ECE-207-G

Time : Three hours]

[Maximum Marks : 75

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

Note : Attempt *five* questions in all, selecting *one* question from each Unit. Question No. 1 is *compulsory*.

1. (a) Explain the term knee voltage of a diode.
- (b) Explain in brief the capacitor filter.
- (c) What do you mean by unity gain amplifier ?
- (d) Distinguish between analog and digital signals.
- (e) Which type of feed back is used in oscillator.
- (f) Explain in brief the universal gates. $2.5 \times 6 = 15$

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UNIT - I

- 2. (a) Explain in detail the construction and working of half wave rectifier. 8
 - (b) How zener diode works as voltage regulator ? 7
3. Explain the Input Output characteristics of BJT in CE configuration. 15

UNIT - II

- 4. (a) Explain in detail the working of operational amplifier as Integrator. 8
 - (b) Discuss the practical characteristics of operational amplifier. 7
5. Write short notes on the following :
- (a) Inverting and non inverting op-amp 8
 - (b) Difference amplifier 7

UNIT - III

- 6. Explain in detail the working of IC 555 as astable and monostable multivibrator. 15
7. Write short notes on the following :
- (a) Barkhausen criterion for oscillation 8
 - (b) Wein bridge oscillator 7
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UNIT - IV

- 8. Explain in detail the basic gates with their truth table and logical expressions. 15
9. Write short notes on the following :
- (a) AM and FM 8
 - (b) Block diagram of GSM System 7
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