

S.B. Roll No.....

**BASIC ELECTRONICS**  
**2<sup>nd</sup> Exam/ECE/CSE/IT/MECHATRONICS/0190/Feb'2021**  
**(For 2018 batch onwards)**

**Duration: 1.15Hrs.**

**M.Marks:25**

**SECTION-A**

**Q1. Attempt any three questions.**

**3x5=15**

- i. What is FET? Explain its working
- ii. Explain the clipper circuits with neat diagram
- iii. Explain the difference between FET and BJT.
- iv. Explain the working of half wave rectifier.
- v. What do you mean by thermal runaway?
- vi. Derive an expression for amplification factor ( $\beta$ ) of common emitter configuration.
- vii. Explain the concept of bipolar transistor and draw symbol of NPN and PNP transistors.

**SECTION-B**

**Q2. Attempt any one question.**

**1x10=10**

- a. Explain Construction, operation and characteristics of a MOSFET in depletion and enhancement modes
- b. Explain conductors, insulators and semiconductors on the basis of their energy band diagram
- c. Write note on PN Junction and its biasing. Difference between the n-type and p-type semiconductor.
- d. Compare CB, CE and CC configurations of a transistor with at least five parameters.