Roll No. ☐☐☐☐☐☐☐☐☐☐☐☐☐   **Total No. of Pages : 02**

Total No. of Questions : 09

B.Tech.(ME) (2018 Batch)   (Sem.–3)
BASIC ELECTRONICS ENGINEERING
Subject Code : BTEC305-18
M.Code : 76420

Time : 3 Hrs.   **Max. Marks : 60**

INSTRUCTIONS TO CANDIDATES :
1. **SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.**
2. **SECTION-B contains FIVE questions carrying FIVE marks each and students have to attempt any FOUR questions.**
3. **SECTION-C contains THREE questions carrying TEN marks each and students have to attempt any TWO questions.**

SECTION-A

1. **Write briefly :**

   a) Define breakdown voltage and knee voltage.

   b) Define Zener Diode.

   c) What do you mean by integrated circuits?

   d) What is the working principle of op-Amp?

   e) Give the working principle of simple diode.

   f) Draw the VI characteristic of diode.

   g) Convert 101011 into Decimal system & Octal system.

   h) Write the truth table of universal gates.

   i) State the functions of flip flops.

   j) Draw the symbolic representation of BJT and FET.

SECTION-B

2.   Explain VI characteristics of Zener diode at biasing voltage 1.1ev.

3.   Compare conductor, semiconductors and insulators in detail.

4.   Describe the concept of bias stabilization in PNP transistor.

5.   Perform the following addition by 2's complement

     a) 20 to –26

     b) 25 to –15.

6.   What are various laws for Boolean logic simplification?

SECTION-C

7.   What are various applications of Op-Amp? Explain in detail.

8.   a) What are the different logic gates? Give their truth tables.

     b) Discuss the working of a full wave rectifier.

9.   Draw the equivalent circuit & truth table of RS Flip-Flop.

NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.