Roll No. | | | | | | | | | | | | Total No. of Pages : 02

Total No. of Questions : 09

B.Tech.(ME) (Sem.–3)

BASIC ELECTRONICS ENGINEERING

Subject Code : BTEC305-18

M.Code : 76420

Date of Examination: 26-05-2023

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) What is peak inverse voltage?

b) What is breakdown voltage?

c) What are filter circuits?

d) What is center tap full wave rectifier?

e) What is meant by LSB and MSB.

f) What is photo diode? Which material is used for them?

g) What is operating point?

h) What is comparator?

i) What is the truth table of NAND and NOR gate?

j) Convert the hexadecimal number into octal:

i. 5B.34

ii. 3DE

SECTION-B

2. Explain the working of full wave rectifier with filtered output.

3. Draw and explain the three basic configurations of NPN transistor.

4. Explain with diagram how an op-amp can be used as phase shifter.

5. Explain JK flip flop with its truth table.

6. Solve the following :

   a) $(5735.20)_8 = (?)_2 = (?)_{16}$

   b) $(A152)_{16} = (?)_8 = (?)_2$

   c) Add $(100000.001)_2 = (11110.111)_2$

SECTION-C

7. Explain the block diagram of an operational amplifier? Also draw the pin diagram of 741 op-amp.

8. Explain the working of an Emitter Follower and show how it performs the function of impedance transformation.

9. Write short note on the following :

   a) SR Flip flop

   b) Common mode rejection ratio and slew rate in op-amp

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.