Total No. of Questions : 8]

SEAT No. : ____

PC-1680

[Total No. of Pages : 2

[6351]-106

F.E.

BASIC ELECTRONICS ENGINEERING

(2019 Pattern)(Semester - I & II)(104010)(Credit System)

Time : 2½ Hours] ***[Max. Marks : 70***

Instructions to the candidates :

1) ***Solve Q.1 or Q.2, Q.3 or Q.4, Q5 or Q6, Q7 or Q8.***
2) ***Neat diagrams must be drawn wherever necessary.***
3) ***Figures to the right indicate full marks.***
4) ***Assume suitable data, if necessary.***

Q1) a) Convert **[6]**

i. $(43)_{10} = (?)_2$ - Decimal to Binary.

ii. $(45)_8 = (?)_{10}$ - Octal to Decimal.

iii. $(10101101)_2 = (?)_8$ - Bianry to Octal.

b) State and prove De Morgan's Theorems. **[6]**

c) Draw and explain Block Diagram of Microprocessor. **[6]**

OR

Q2) a) Waht is Flip-Flop? Explain 'D' FF with logic symbol and truth table. **[6]**

b) Why NAND and NOR are known as universal logic gates? **[6]**

c) Design and implement half adder with the help of truth table, logic equations and circuit diagram. **[6]**

Q3) a) Draw block diagram of function generator and explain function of each block. **[6]**

b) Differentiate between Ammeter and Voltmeter. **[5]**

c) Explain with block diagram of Digital Multimeter. **[6]**

P.T.O.

OR

Q4) a) Explain block diagram of digital storage oscilloscope. **[6]**

b) Draw block diagram of power scope and explain it's operation. **[6]**

c) Explain application of auto transformer with diagram. **[5]**

Q5) a) Explain Thermistor with it's construction and application. **[6]**

b) Explain selection criteria for sensor. **[6]**

c) Differentiate between active and passive sensors. **[5]**

OR

Q6) a) Explain the construction and working of LVDT. **[6]**

b) Explain Biosensor with one application. **[6]**

c) Explain load cell. **[5]**

Q7) a) Explain need of modulation. What are the different techniques of modulation. **[6]**

b) Explain different types of cables used in electronic communication. **[6]**

c) Explain cellular concept of mobile communication system. **[6]**

OR

Q8) a) Draw block diagram of communication system and explain each block in brief. **[6]**

b) Draw block diagram of AM transmitter and explain. **[6]**

c) Draw and explain the block diagram of GSM. **[6]**