

Total No. of Questions : 8]

SEAT No. :

P-9071

[Total No. Of Pages : 2

[6178]-6

F.E.

**BASIC ELECTRONICS ENGINEERING**  
**(2019 Pattern) (Semester - I/II) (104010)**

Time : 2½ Hours]

[Max. Marks : 70

Instructions to the candidates:

- 1) Attempt Q.1 or Q.2, Q.3 or 4, Q.5 or Q.6, Q.7 or Q.8.
- 2) Figure to right indicate full mark.

- Q1) a) Draw and Explain full adder using two half adders with a Truth Table and give its sum and carry equation. [6]
- b) Give the expression and truth table of the Basic Gates. [6]
- c) State and prove De Morgan's laws. [6]

OR

- Q2) a) Convert the following.
- i)  $(5F1.6C)_{16}$  to octal
  - ii) Convert the  $(9D.33)_{16}$  to Decimal. [6]
- b) Draw and explain block diagram of Microprocessor. [6]
- c) Classify Gates and write the IC numbers with Truth Table. [6]
- Q3) a) Explain Function Generator with block diagram. [6]
- b) Explain the working principle of Autotransformer. Give its three applications. [5]
- c) Draw and explain the block diagram of digital Multi meter. [6]

OR

P.T.O.

- Q4) a) Explain how to convert Galvanometer to Analog Ammeter and how to use multi range Ammeter. [6]
- b) Draw and explain the block diagram of AC/DC power supply. [5]
- c) Compare CRO and DSO. [6]
- Q5) a) Draw the construction of LVDT and explain its operation. Write its advantages, disadvantages and applications. [6]
- b) Explain working, principle and one application of biosensors. [6]
- c) Explain the working principle of strain gauge. Explain load cell. [5]

OR

- Q6) a) Differentiate active and passive sensors. [6]
- b) What is mean by thermocouple? Explain the principle, construction and working of thermocouple. Also state its advantages, disadvantages and applications. [6]
- c) State and explain the selection criteria of Sensors. [5]
- Q7) a) Explain IEEE electromagnetic frequency spectrum and state allotment of frequency bands for different applications. [6]
- b) Compare types of cables used in Electronic Communication System. [6]
- c) Draw and explain the elements of communication system. [6]

OR

- Q8) a) Draw and explain AM transmitter. [6]
- b) Draw and explain the block diagram of GSM system for mobile. [6]
- c) Explain the concept of Cellular Network. [6]

