Total No. of Questions—**6**] [Total No. of Printed Pages—**2**

Seat No.	

[4956]-11

F.E. (Common) (Second Semester) EXAMINATION, 2016

BASIC ELECTRONICS ENGINEERING

(2008 Pattern)

Time : Two Hours **Maximum Marks : 50**

N.B. :— (*i*) Answer Q. **1** or Q. **2**, Q. **3** or Q. **4**, Q. **5** or Q. **6**.

(*ii*) Answer *all* questions in same answer-book.

(*iii*) Neat diagrams must be drawn wherever necessary.

(*iv*) Figures to the right side indicate full marks.

(*v*) Use of calculator is allowed.

(*vi*) Assume suitable data if necessary.

1. (*a*) A bridge rectifier is applied with input from a step down transformer having turns ratio 8 : 1 and input 230V, 50Hz. If diode forward resistance is 1Ω, secondary resistance is 10Ω, load resistance is 2KΩ, [8]

find :

(*i*) DC power output

(*ii*) PIV across each diode

(*iii*) Percentage efficiency

(*iv*) Percentage regulation.

(*b*) Explain the operation of BJT as a switch with neat diagram. [4]

(*c*) With a neat construction diagram explain the working of TRIAC. Also draw its characteristic. [6]

P.T.O.

Or

2. (*a*) Explain the operation of a bridge rectifier. Also state its advantages. [8]

(*b*) Write a short note on : Seven segment display. [4]

(*c*) Compare SCR and TRIAC. [6]

3. (*a*) Draw a neat diagram of three input inverting summing amplifier using op-amp and obtain the expression of its output voltage. [8]

(*b*) What is full adder ? Explain the working of full adder with the help of truth table and give equation for sum and carry. [8]

Or

4. (*a*) Draw diagram of 8 : 1 MUX. What is the relation between number of select lines and inputs ? Give applications of multiplexers. [6]

(*b*) Draw a neat circuit diagram of Ideal integrator and explain its operation with input and output waveform. Also state drawbacks of this circuit. [6]

(*c*) State and prove the DeMorgan's theorems. [4]

5. (*a*) Differentiate AM and FM. [6]

(*b*) Write expression of AM. Also draw its frequency spectrum. [2]

(*c*) Draw constructional details of LVDT (displacement transducer). Explain its operation. State its advantages and disadvantages. [8]

Or

6. (*a*) What is the need of modulation ? Explain. [6]

(*b*) Explain wired communication and wireless communication. [4]

(*c*) Draw block diagram of electronic weighing machine and explain its operation. [6]