Total No. of Questions—**8**] [Total No. of Printed Pages—**3**

Seat No.	

[4956]-105

F.E. (First Semester) EXAMINATION, 2016

BASIC ELECTRONICS ENGINEERING

(2012 PATTERN)

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

N.B. **:—** (*i*) Figures to the right indicate full marks.

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

(*iii*) Use of electronic pocket calculator is allowed.

(*iv*) Assume suitable data, if necessary.

1. (*a*) Draw and Explain full wave rectifier with capacitor filter. [6]

(*b*) Explain CE amplifier with the help of DC loadline. [6]

Or

2. (*a*) Explain with V-I characteristics the working of Zener diode as a voltage regulator. [6]

(*b*) Define α and β in case of transistor. Derive the relationship between them.

If $\alpha = 0.98$, Calculate value of β. [6]

3. (*a*) Draw a neat diagram of 3-input inverting summing amplifier and obtain expression for its o/p voltage. [6]

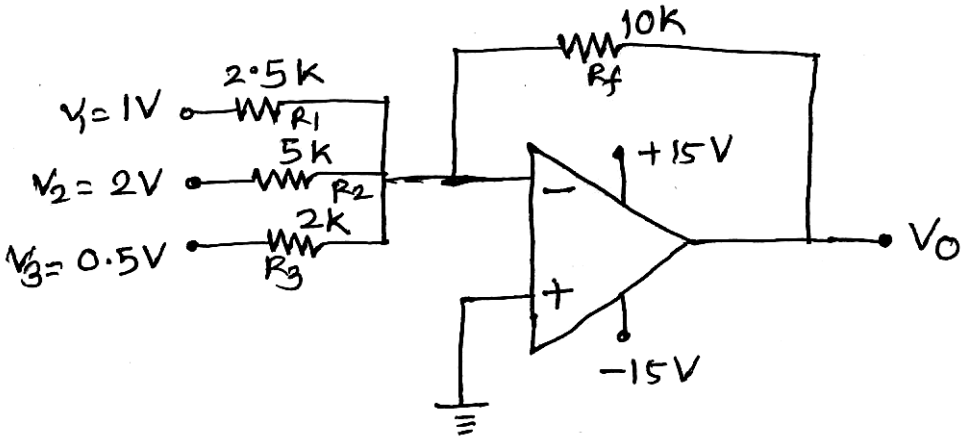
P.T.O.

(*b*) Compare synchronous and asynchronous counter. [4]

(*c*) State Demorgan's theorem. [2]

Or

4. (*a*) For the given circuit. Find V_o. [6]



(*b*) Compare microprocessar and microcontroller. [4]

(*c*) Explain how Ex-OR gate can be used as an inverter. [2]

5. (*a*) Draw a constructional diagram of SCR and Explain its working with the help of two transistor analogy. [6]

(*b*) With a neat diagram explain construction and working of LVDT. Give its advantages and applications. [7]

Or

6. (*a*) Compare : [6]

(*i*) SCR and TRIAC

(*ii*) DIAC and TRIAC.

(*b*) Draw and explain electronic weighting machine. [5]

(*c*) Define :

(*i*) Active Transducer

(*ii*) Passive Transducer. [2]

7. (*a*) Define AM. Derive expression for AM. Write expression for modulation index. Draw waveforms of AM. [7]

(*b*) Write short note on :

(*i*) Coaxial Cable

(*ii*) Fiber Optic Cable. [6]

8. (*a*) Draw and Explain block diagram of GSM system. [6]

(*b*) With respect to FM explain

(*i*) Frequency deviation

(*ii*) Modulation index

(*iii*) Deviation ratio

(*iv*) Frequency spectrum of FM. [7]