Total No. of Questions—**6**] [Total No. of Printed Pages—**3**

Seat No.	

[4856]-26

F.E. (Second Semester) EXAMINATION, 2015

BASIC ELECTRONICS ENGINEERING

(2008 PATTERN)

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

N.B. **:—** (*i*) Solve Q. No. **1** *or* Q. No. **2**, Q. No. **3** *or* Q. No. **4**, Q. No. **5** *or* Q. No. **6**.

(*ii*) Figures to the right indicate full marks.

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

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

1. (*a*) Draw a neat circuit diagram of Bridge Rectifier with capacitor filter and explain its operation with waveforms. Give the equation of output voltage with and without capacitor filter. [7]

(*b*) Discuss the effect of the following capacitors on frequency response of amplifier. [6]

(1) Coupling capacitor

(2) Bypass capacitor

(3) Diffusion capacitor.

(*c*) Give and explain any *four* features of SCR. [4]

P.T.O.

Or

2. (*a*) Draw and explain circuit diagram of single stage CE amplifier. Draw a frequency response and explain it with gain, lower and higher frequencies. [7]

(*b*) Compare half wave and full wave rectifier. [6]

(*c*) For the circuit shown in the figure below, find : [4]

(1) O/P voltage

(2) Voltage across Rs.

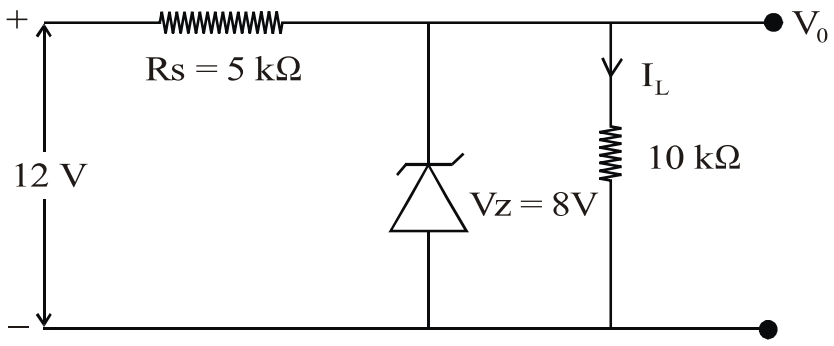

Fig.

3. (*a*) Explain the following ideal characteristics of OP-Amp. [6]

(1) CMRR

(2) Slew Rate

(3) Band-width

(*b*) Draw the diagram of 8 : 1 Mux. What is the relation between number of select lines and Input ? Give applications of multiplexers. [7]

(*c*) State and prove De Morgan's theorem. [4]

Or

4. (*a*) Draw and explain circuit diagram of square wave Generator using Op-Amp. [7]

(*b*) Simplify the following expression. [6]

$$Y = \overline{(\overline{AB} + \overline{A} + AB)}$$

(*c*) Explain any *four* characteristics of an Ideal Op-Amp. [4]

5. (*a*) Explain different characteristics of Transducer. [6]

(*b*) Draw and explain Superheterodyne Receiver. [6]

(*c*) Write a short note on any *one* : [4]

(1) Electronic Weighing Machine.

(2) PLC.

Or

6. (*a*) With neat diagram explain construction and working of LVDT. [6]

(*b*) Draw and explain block diagram of mobile communication system. [6]

(*c*) Write a short note on any *one* : [4]

(1) Fiber Optic Cable

(2) Co-axial cable.