

May - June 2011



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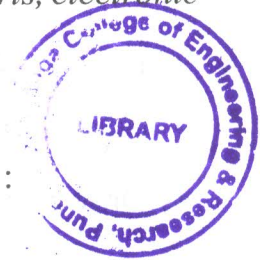
F.E. (Semester – II) Examination, 2011
BASIC ELECTRONICS ENGINEERING
(2008 Pattern)

(For Students Admitted During the Academic Year 2009-2010 and Onwards)

Time : 2 Hours

Max. Marks : 50

- Instructions :** 1) Neat diagrams must be drawn wherever necessary.
2) Black figures to the right indicate full marks.
3) Use of logarithmic tables, slide rule, Mollier charts, electronic pocket calculator and steam tables is allowed.
4) Assume suitable data, if necessary.



1. A) For a half wave rectifier derive the expression for the following :

1) I_{dc}

2) V_{dc}

3) P_{dc}

4) Ripple factor.

4

B) List different materials used in LEDs along with the colour of light emitted.

4

C) With the help of neat diagram explain the operation of p-channel JFET and sketch the output characteristics.

8

OR

2. A) Draw the circuit diagram of zener voltage regulator and explain how it gives line and load regulation.

8

B) Explain operation of BJT as a switch with neat circuit diagram.

4

C) Compare SCR and TRIAC.

4

3. A) Draw the 1 : 16 DEMUX logic circuit and explain its working with the help of truth table.

6

B) What is meant by universal gate ? By using any universal gate draw all the basic gates.

4

C) Draw and explain the operation of a) Voltage follower b) V-I converter.

6

OR

P.T.O.



4. A) Draw and explain the 8-bit ring counter using D flip-flops. 6
- B) For the inverting summing amplifier if following inputs are applied then calculate output voltage.
- $V_{in1} = 1.5 \text{ V}$ $V_{in2} = 3.5 \text{ V}$
- Given that $R_1 = R_2 = R_F = 5.2 \text{ K}\Omega$. 4
- C) Draw the circuit diagram of integrator and explain its working. Draw the output waveform for square wave input. 6
5. A) List the different pressure transducers. Explain the working of any one in detail. 6
- B) Draw and explain electromagnetic spectrum. 6
- C) Write short note on CNC machine. 6

OR

6. A) Draw the block diagram of communication system and explain each block in detail. 6
- B) What is the need of modulation ? Explain frequency modulation in detail. 6
- C) Write short note on PLC. 6