Total No. of Questions : 8] *[Total No. of Printed Pages : 2*

Roll No .....

EE/EX-223

B.E., III Semester

Examination, December 2016

Choice Based Credit System (CBCS)

Analog Electronics

Time : Three Hours

Maximum Marks : 60

Note: i) Attempt any five questions.
ii) All questions carry equal marks.

1. a) Explain the term transition or junction capacitance 'C_T' of a p-n junction diode. Derive an expression for it.
   b) Explain Zener diodes with its construction, working and applications.

2. a) Explain the working of bridge rectifier with circuit diagram, input and output waveforms.
   b) Define α and β of a transistor and derive relationship between them.

3. a) Explain the working of p-channel depletion type MOSFET. Also discuss and draw the characteristics curve.
   b) Define h-parameter of a transistor. Find the input and output resistance in CE configuration.

4. a) Discuss the effect of negative feedback on gain, input impedance and output impedance, distortion, stability.
   b) What is Wein bridge oscillator? Explain and derive expression for frequency of oscillation.

5. a) Draw the circuit of Bistable multivibrator. Explain its working.
   b) Explain the operation of a Darlington emitter follower. Why the input impedance is higher than that of a single stage emitter follower.

6. a) Differentiate between clipper and clampers.
   b) Define the following:
      i) CMRR
      ii) Slew rate
      iii) Input offset current
      iv) Output offset voltage

7. a) What is 555 timer? Explain in brief and give its applications.
   b) Explain with diagram how an operational amplifier can be used as differentiator and an integrator.

8. Write short notes on (any two)
   a) Push-pull power amplifier
   b) LC oscillator
   c) DC load line
   d) LED

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