Code: 9A04502

R09

B.Tech III Year I Semester (R09) Supplementary Examinations June 2016

LINEAR IC APPLICATIONS

(Electronics & Communication Engineering)

Time: 3 hours   Max Marks: 70

Answer any FIVE questions
All questions carry equal marks
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1 (a) Explain briefly the properties of all differential amplifier configurations.
   (b) Explain DC analysis of differential amplifier.

2 (a) Discuss the electrical characteristics of an OP-AMP in detail.
   (b) Discuss the three basic types of linear IC packages and briefly explain the characteristics of each.

3 (a) What is the voltage at point A and B for the circuit shown in figure below, if $V_1 = 5$ V and $V_2 = 5.1$ V.
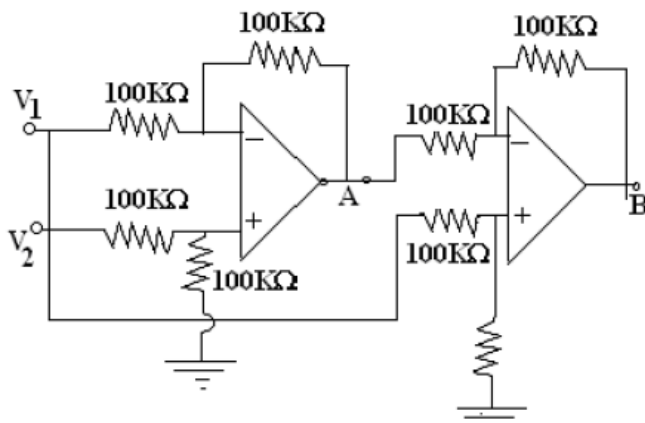
   (b) Draw the circuit of non-inverting amplifier and derive the expression for output voltage.

4 (a) Explain Half wave Rectifier using inverting and non-inverting configuration.
   (b) Explain the principle of operation of Saw-tooth waveform generator with suitable circuit.

5 (a) Explain the operation of second order low pass buffer worth filter.
   (b) Design a second order low pass filter for a cutoff frequency of 100 Hz and draw the circuit diagram.

6 (a) Design a 555 Astable multivibrator to operate at 10 KHz with 40% duty cycle.
   (b) Explain in which the 555 timer can be used as Astable multivibrator.

7 (a) Draw the schematic circuit diagram of a Servo A/D converter and explain the operations of this system.
   (b) Compare Servo A/D with other types of A/D converters.

8 (a) What are the basic blocks of analog multiplexer? Explain how the data selection process is performed in it.
   (b) Explain the operation of balanced modulator using neat sketch.
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