c) Write a short note on the following

i. Transcondutance cells

ii. Ladder design

—x—

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EEC-011

(Following Paper ID and Roll No. to be filled in your Answer Book)

PAPER ID : 131651

Roll No.

B.Tech.

(SEM VI) THEORY EXAMINATION,2015-16

ANALOG SIGNAL PROCESSING

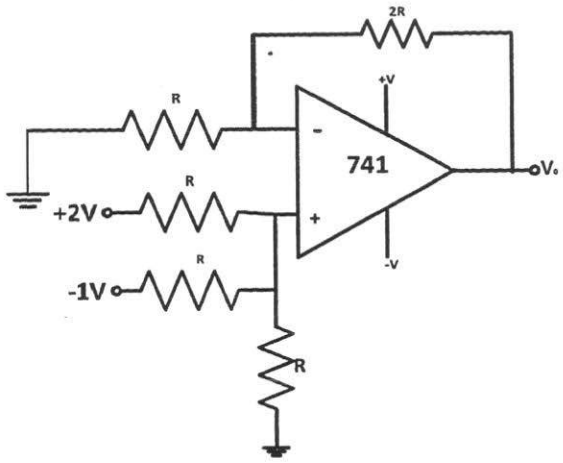
Time : 2 Hours] *[Total Marks : 50*

Note- ***Attempt All Questions. All Questions carry equal marks*:-**

1. Attempt any Two of the following questions:

(a) Describe in detail account on Integrator and Differentiator with suitable equations. Also define CMRR and Slew rate with its significance.

(b) Calculate the output voltage V_0 of the given circuit in fig.



(c) Sketch a three input inverting summing circuit and derive an expression for the output voltage. Design a Non- Inverting amplifier capable of providing a voltage gain of 15. Assume ideal Op-Amp and Resistances used should not be exceeding 30K&!.

2. Attempt any TWO of the following questions:

a) Name the circuit that is used to detect the peak value of the non- sinusoidal waveforms. Explain the operation with neat circuit diagram.

b) Draw and explain the most commonly used three op-amp instrumentation amplifiers. Also derive the expression for its voltage gain.

c) Draw the circuit of an inverting negative half wave rectifier and its transfer characteristics. Explain its working.

3. Attempt any TWO of the following questions:

a) Draw and explain the anti-log amplifier. How temperature compensation is achieved in anti-log amplifier?

b) Draw the circuit of a gernalized impedance converter (GIC). Realize a grounded impedance using GIC and find its value.

c) Draw the block diagram of Tow Thomasbiquad. Derive the circuit diagram of the biquad. Find the transfer function of high pass and low pass functions.

4. Attempt any TWO of the following questions:

a) Draw the KHN biquad filter and derive the transfer function of BPF and LPF from that.

b) Discuss first order gyrators and sallen key circuits.