RAMAKRISHNA MISSION VIDYAMANDIRA

(Residential Autonomous College affiliated to University of Calcutta)

FIRST YEAR [2017-20]

B.A. /B.Sc. FIRST SEMESTER (January – June) 2018

Mid-Semester Examination, March 2018

Date : 15/03/2018

Time : 11 am – 12 noon

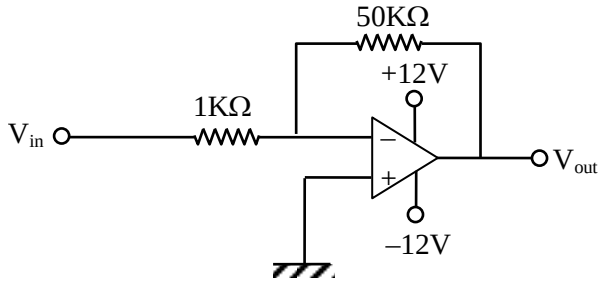
ELECTRONICS (General)

Paper: II

Full Marks: 25

Answer **any five** questions of the following**:** (5 × 5)

1. Describe thermal runaway and how it can be overcome? (5)
2. Describe Voltage Divider Biasing method. (5)
3. Compare negative and positive feedback. What do you mean by sampling and mixing? In this context mention different topologies of feedback. (2 + 2 + 1)
4. Draw a schematic diagram of a current-shunt feedback network. Mention the advantages which can be achieved in an amplifier by applying negative feedback. (2 + 3)
5. Obtain an expression to prove that the amount of phase distortion can be reduced with the help of negative feedback. (5)
6. Define CMRR, input offset current and output offset voltage. Draw and explain the open-loop characteristic of an OPAMP. (3 + 2)
7. Compute the voltage gain for the amplifier shown in the following figure. Find the output voltage (V_{out}), if the input voltage is: $V_{in} = 0 \cdot 5 \sin 100\pi t$ volt



8. Write a short note on **any one** of the following: (1×5)
   a) Schmitt trigger
   b) Peak detector circuit
   c) Integrator using OPAMP.

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