RAMAKRISHNA MISSION VIDYAMANDIRA

(Residential Autonomous College affiliated to University of Calcutta)

FIRST YEAR [2018-21]

B.A. /B.Sc. FIRST SEMESTER (January – June) 2019

Mid-Semester Examination, March 2019

Date : 26/03/2019 **ELECTRONICS (General)**

Time : 11 am – 12 noon Paper: II Full Marks: 25

Answer **any five** questions of the following**:** [5 × 5]

1. a) What is load line? State its significance.
   b) What do you mean by quiescent point of a transistor amplifier? [2+2+1]
2. a) What is thermal runaway? How does it take place in a BJT amplifier?
   b) What are the factors that affect the bias stability of a transistor? [1+2+2]
3. a) Compare class A,B,AB and C amplifiers.
   b) Draw circuit of a class B amplifier. [3+2]
4. a) State advantages of negative feedback. Give one example where positive feedback is employed.
   b) What do you mean by sampling and mixing in any feedback network? [2+1+2]
5. a) State Barkhausen criterion for oscillation.
   b) Describe the working of a Colpitts oscillator. [1+4]
6. a) Compare properties of practical OPAMP with that of ideal one.
   b) Define and explain CMRR. [2+3]
7. a) Describe the applications of an OPAMP as a non-inverting amplifier.
   b) State the condition under which the non-inverting amplifier will act as a unity gain buffer. [3+2]
8. Write a short note on **any two** of the following: [2×2.5]
   a) h parameter
   b) Stability factors
   c) Voltage sampling-voltage mixing feedback
   d) Virtual ground
   e) OPAMP as voltage comparator

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