RAMAKRISHNA MISSION VIDYAMANDIRA

(Residential Autonomous College affiliated to University of Calcutta)

FIRST YEAR [BATCH 2015-18]
B.A./B.Sc. SECOND SEMESTER (January – June) 2016
Mid-Semester Examination, March 2016

Date   : 18/03/2016

Time   : 12 noon – 1 pm

ELECTRONICS (General)

Paper : II

Full Marks : 25

1. **Answer <u>any five</u> questions :** [5×3]

   a) What is the difference between current and voltage feedback?

   b) Why voltage series feedback is most commonly used in Cascaded amplifiers?

   c) An amplifier with voltage gain of 60db uses $\frac{1}{20}$ of its output in negative feedback. Calculate the gain with feedback in db.

   d) What is the effect of removing bypass capacitor across the emitter resistor in case of a CE amplifier?

   e) Why are L-C resonant circuit impractical at audio frequencies?

   f) What are the Barkhausen conditions of oscillations?

   g) Why Clapp oscillator is preferred over the Colpitt's oscillator?

   h) Why is Crystal oscillator used in Communication transmitters and receivers?

Answer <u>any one</u> question from question no. 2&3 : [1×10]

2. Describe the operation of Hartley oscillator with a neat sketch. [10]

3. a) A negative feedback of $\beta = 0 \cdot 002$ is applied to an amplifier of gain 1,000. Calculate the change in overall gain of the feedback amplifier if the internal amplifier is subjected to a gain reduced of 15%. [5]

    b) Voltage gain of an amplifier without feedback is 60db. It decreases to 40db with feedback. Calculate the feedback factor. [5]

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