C14–EE–405

4465

BOARD DIPLOMA EXAMINATION, (C–14)

SEPTEMBER/OCTOBER - 2020

DEEE—FOURTH SEMESTER EXAMINATION

ELECTRONICS—II

Time : 3 hours]   [*Total Marks* : 80

PART—A   3×10=30

Instructions : (1) Answer **all** questions.

            (2) Each question carries **three** marks.

            (3) Answers should be brief and straight to the point and shall not exceed *five* simple sentences.

  1. Define negative feedback and feedback factor.

  2. What is the need for power amplifier?

  3. Draw the circuit diagram of Hartley oscillator.

  4. What is the need of AF oscillator?

  5. Give three reasons for not implementing differential amplifier with discrete components.

  6. Define the terms *(a)* CMRR and *(b)* virtual ground.

  7. Define frequency modulation and draw the waveforms of frequency-modulated wave.

  8. Mention the different components of AM wave in the equation.

9. State the necessity of time base voltage.

10. Define the terms *(a)* resolution, *(b)* accuracy and *(c)* settling time of D/A converter.

<center>**PART—B**   10×5=50</center>

Instructions : (1) Answer *any* **five** questions.

                (2) Each question carries **ten** marks.

                (3) Answers should be comprehensive and the criterion for valuation is the content but not the length of the answer.

11. Draw the block diagrams of voltage series, voltage shunt, current series and current shunt feedback amplifiers.

12. Explain the performance characteristics of emitter follower and list its applications.

13. Explain the working of RC phase shift oscillator with the help of circuit diagram.

14. *(a)* State the need for square wave oscillator.   3

     (b) Classify the different types of oscillators.   4

     (c) State the conditions for sustained oscillations.   3

15. Explain Op-Amp as non-inverting amplifier and give its gain expression.

16. Explain the operational amplifier as—

(a) summer;

(b) inverter.   5+5=10

17. Explain the effect of over-modulation and under-modulation with waveforms.

18. *(a)* Draw the circuit diagram of an R-2R ladder D/A converter.   5

     (b) Explain the loading effect of voltmeter with an example.   5

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