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C16-EC–302

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BOARD DIPLOMA EXAMINATION, (C-16)

OCTOBER/NOVEMBER—2023

DECE - THIRD SEMESTER EXAMINATION

ELECTRONIC CIRCUITS

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. What is the need of heat sink for a power transistor?

2. List the advantages and disadvantages of collector to base bias.

3. Define h-parameters of BJT.

4. What is the need of multistage amplifier?

5. List the merits of negative feedback amplifier.

6. List the applications of class C amplifier.

7. Draw the equivalent circuit of crystal.

8. State the need of wave shaping networks.

9. List the applications of clippers and clampers.

10. Draw the circuit diagram of shunt voltage regulator.

PART—B

10×5=50

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

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

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

11. *(a)* Define stability factors and give their equations. 5

(b) Explain the bias compensation techniques. 5

12. Draw and explain the working of self-bias circuit and list its advantages. 3+5+2

13. Explain the operation of two-stage transformer coupled amplifier with a circuit and draw its frequency response. 3+4+3

14. *(a)* Draw and explain the block diagram of negative feedback amplifier. 3+4

(b) List three applications of Darlington pair. 3

15. Explain the working of class B-push-pull amplifier with circuit diagram. 4+6

16. Explain the working of an RC phase shift oscillator with a circuit diagram and write the expression for its frequency of oscillations. 3+5+2

17. Explain the working of transistorized collector coupled astable multivibrator with necessary diagram. 10

18. *(a)* Explain the working principle of varactor diode. 5

(b) Explain the working of photovoltaic cell. 5

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