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C16–EC–302

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BOARD DIPLOMA EXAMINATION, (C–16)

MARCH/APRIL—2018

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. Explain the thermal runaway.

2. Write the importance of heat sink.

3. Draw the circuit diagram of two-stage RC-coupled amplifier.

4. Explain the concept of positive feedback.

5. Compare the characteristics of the negative feedback amplifiers.

6. List the applications of class C amplifier.

7. Explain the Barkhausen criteria in oscillators.

8. List different linear wave-shaping networks.

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9. Draw the circuit diagram of shunt diode positive clipper.

10. Explain the photovoltaic effect.

PART—B

10×5=50

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. Explain diode compensation technique with a neat circuit diagram. 3+7

12. *(a)* Define stability factors and give their equations. 6

(b) Explain the importance of bias stabilization. 4

13. Explain the operation of transformer-coupled amplifier and draw the frequency response. 7+3

14. *(a)* Derive the expression for the gain of negative feedback amplifier. 4

(b) Draw the block diagram of current series and voltage shunt feedback amplifiers. 6

15. Explain the working of class AB push-pull amplifier circuit. 10

16. Explain the working of Colpitts oscillator with a neat circuit diagram. 10

17. Explain the working of Schmitt trigger circuit with waveform.

18. *(a)* Explain the operation of transistor series voltage regulator. 7

(b) Explain the disadvantage of series voltage regulator. 3

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