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C14–EE–305

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BOARD DIPLOMA EXAMINATION, (C–14)

OCT/NOV—2016

DEEE—THIRD SEMESTER EXAMINATION

ELECTRONICS—I

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

PART—A 3×10=30

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

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

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

1. List the factors that affect the resistance of a material. Give an expression for resistance in terms of these factors.

2. List the applications of capacitors.

3. Distinguish between intrinsic and extrinsic semiconductors.

4. What are the drawbacks of half-wave rectifier?

5. What is the need of voltage regulation in power supplies?

6. Define the terms intrinsic stand-off ratio and peak voltage with respect to UJT.

7. Briefly explain the working principle of LED.

8. Define operating point Q.

9. What is the function of bypass capacitor in a practical transistor amplifier?

10. Classify amplifiers based on period of conduction.

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. *(a)* Describe the different losses in inductors and transformers. 6

(b) Write a short note on mutual inductance. 4

12. Draw the output characteristics of transistor connected in CE configuration. Mark different regions on the characteristics and explain them.

13. Explain the advantages of bridge-type full-wave rectifier over center-tapped full-wave rectifier. With neat circuit diagram and waveforms, explain the working of bridge-type full-wave rectifier.

14. Explain the working of *n*-channel JFET with neat sketches. Draw its drain characteristics.

15. With neat sketches, explain the working of SCR. Draw its *V-I* characteristics.

16. Stage the need of stabilization of operating point. Explain how the operating point can be stabilized through self-biasing circuit.

17. Draw the circuit of two-stage RC coupled amplifier and explain its working. Draw its frequency response.

18. Draw the circuit of transformer coupled CE amplifier and explain its working. Draw its frequency response.

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