



C14-EE-305

4247

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 <sup>\*</sup> 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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