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C14–AEI–303

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BOARD DIPLOMA EXAMINATION, (C–14)

OCT/NOV—2018

DAEIE—THIRD SEMESTER EXAMINATION

ELECTRONIC DEVICES AND APPLICATIONS

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. List any three electrical properties of solid semiconductor materials.

2. List any three applications of Zener diode.

3. Draw the circuit of a clipper using diode.

4. List the operating regions of transistor.

5. Define alpha factor (current amplification factor).

6. Classify FETs.

7. Give the expression for intrinsic stand-off ratio of UJT.

8. List any three thyristor family devices.

9. Draw the Volt-Ampere characteristics of SCR.

10. Define IC.

PART—B

10×5=50

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

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

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

11. Describe the working of PN junction diode with various biasing voltages.

12. Explain the working of half -wave rectifier with circuit diagram and waveforms.

13. *(a)* Explain the working principle of Varactor diode.

(b) List any five specifications of ICs.

14. Describe the working of transistor as an amplifier (CE configuration).

15. Compare the performance characteristics of transistor in CB, CE and CC configurations.

16. Draw and explain the principle of operation of depletion MOSFET.

17. Describe the constructional details of SCR with sketches.

18. Draw and explain light dimmer circuit using DIAC and TRAIC.

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