6241

C16-EE–305

6241

BOARD DIPLOMA EXAMINATION, (C-16)

JANUARY/FEBRUARY—2022

DEEE - THIRD SEMESTER EXAMINATION

ELECTRONICS ENGINEERING – I

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. Distinguish between intrinsic and extrinsic semiconductors.

2. Draw the Zener diode symbol and its equivalent circuit.

3. Define *(a)* Peak Inverse Voltage, *(b)* Rectifier Efficiency and *(c)* Ripple factor.

4. State the need for filter circuit in DC Power Supplies.

5. Draw the symbol for *(a)* UJT, *(b)* LED and *(c)* Opto-coupler.

6. List any three applications of Photo diode.

7. Define Thermal Runaway.

8. List the applications of Transformer Coupled CE amplifier.

9. Distinguish between degenerative and regenerative feedback.

10. Explain the effect of feedback on *(a)* Distortion, *(b)* Noise and *(c)* Gain stability

PART—B

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. Explain the working of PN junction diode with No bias, Forward bias and Reverse bias. 10

12. Explain the working of center tapped full wave rectifier with circuit diagram. 10

13. Explain the construction and working of FET and draw its V/I characteristics. 10

14. Explain the construction and working of solar cell with neat diagram. 10

15. Explain the potential divider biasing method with diagram. 10

16. *(a)* State the necessity of proper biasing for amplifier action. 5

(b) What is the need of cascading of amplifiers. 5

17. Draw and explain the circuit of RC coupled CE amplifier and draw its frequency response. 10

18. *(a)* Draw the block diagrams of Voltage Series , Voltage Shunt, Current Series and Current Shunt feedback amplifiers. 8

(b) List any two applications of emitter follower. 2

★ ★ ★