

**6241**  
**BOARD DIPLOMA EXAMINATION**  
**JUNE - 2019**  
**DIPLOMA IN ELECTRICAL AND ELECTRONICS ENGINEERING**  
**ELECTRONICS ENGINEERING - I**  
**THIRD SEMESTER EXAMINATION**

**Time: 3 Hours**

**Total Marks: 80**

**PART - A (3m x 10 = 30m)**

*Note 1: Answer all questions and each question carries 3 marks*

*2: Answers should be brief and straight to the point and shall not exceed 5 simple sentences*

1. Define the terms drift current and diffusion current
2. Derive the relationship between  $\alpha$  and  $\beta$
3. State the need for a filter in power supplies
4. Draw the circuit diagram of voltage regulator in power supply
5. List any three applications of optocoupler
6. What is solar cell and specify its constructional details
7. Define stability factor
8. Define Frequency response and Band width of an amplifier
9. List the advantages of negative feedback in Amplifiers.
10. Classify power amplifiers

**PART - B (10m x 5 = 50m)**

*Note 1: Answer any five questions and each question carries 10 marks*

*\* 2: The answers should be comprehensive and the criteria for valuation is the content but not the length of the answer*

11. Explain the working of PN diode with various bias conditions
12. (a) What are the advantages and disadvantages of bridge rectifier over center tapped full wave rectifier  
  
(b) State the need for a filter in power supplies and List different types of filters
13. Explain the construction and working principle of LED with neat diagram
14. Explain the construction and operation of UJT with neat sketches

15. a) Draw the self bias circuit using BJT  
b) Derive the expression of stability factor for a self bias circuit
16. **Draw the circuit diagram of transformer coupled CE amplifier and explain its working**
17. a) **Classify power amplifiers.**  
b) **Distinguish between voltage and power amplifier.**
- 18A. **Explain the need for stabilisation in transistor biasing**
- B. **Draw the circuit diagram of RC coupled CE amplifier**

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