



C14-AEI-303

4216

**BOARD DIPLOMA EXAMINATION, (C-14)**  
**MARCH/APRIL—2017**  
**DAEI—THIRD SEMESTER EXAMINATION**  
**ELECTRONIC DEVICES AND APPLICATIONS**

Time : 3 hours ]

[ Total Marks : 80

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**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. What are the majority and minority charge carriers in *P* and *N* type materials?
2. List any three applications of tunnel diode.
3. Classify different types of filters.
4. Define alpha and beta (current amplification factors).
5. List any three applications of transistor.
6. List any three applications of FET.
7. Draw the characteristics of UJT.
8. Draw the volt-ampere characteristics of TRIAC.
9. List different thyristor family devices.
10. List any three applications of operational amplifier.

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**PART—B**

10×5=50

- Instructions :** (1) Answer any **five** questions.  
(2) Each question carries **ten** marks.  
(3) Answers should be comprehensive and the criteria for valuation are the content but not the length of the answer.

- 11.** Explain the working of half-wave rectifier circuit with waveforms.
- 12.** (a) Explain the working principle and applications of vector diode. 5  
(b) Explain the operation of simple Zener regulator with diagram. 5
- 13.** (a) Draw the CB and CE transistor configurations. 5  
(b) Write collector current expression in CB and CE modes of transistors in terms of  $\beta$ ,  $I_B$ ,  $I_C$ ,  $I_{CBO}$  and  $I_{CEO}$ . 5
- 14.** Explain the working of *N-P-N* transistor with diagram.
- 15.** Explain the principle of operation of enhancement MOSFET with diagram.
- 16.** Explain the construction and working of SCR with diagram.
- 17.** (a) Explain light dimmer circuit using Diac and Triac with diagram. 6  
(b) Draw the volt-ampere characteristics of DIAC. 4
- 18.** (a) Explain the concept of differential amplifier with diagram. 5  
(b) Explain the working of series diode clipper. 5

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