

1130**Code : 15EC21T**Register
Number

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II Semester Diploma Examination, April/May-2017**BASICS OF SEMI CONDUCTOR DEVICES****Time : 3 Hours]****[Max. Marks : 100**

- Note :** (i) Answer any **SIX** questions from **PART-A**.
(ii) Answer any **SEVEN** question from **PART-B**.

PART – A**5 × 6 = 30****BETA CONSOLE!**

1. Define doping. Explain atomic structure of p-type semiconductor.

5

2. Explain working of NPN Transistor.

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5

3. Sketch and explain input characteristics of transistor in CE mode.

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4. Explain CMOSFET as an inverter.

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5. Compare BJT and FET.

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6. List the applications of Schotky diode and GUNN diode.

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7. Define IC's. Mention advantages.

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8. Write a short note on Solar cell.

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9. Explain the terms photoemission and photoconduction.

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PART – B

7 × 10 = 70

10. (a) Explain effect of temperature on semiconductor devices. 4
 (b) Explain the working principal of Zener diode. 6
11. (a) Describe the formation of PN junction and write the diode current equation. 6
 (b) Applications of Diodes. 4
12. (a) In a common base connection of a transistor collector current is 0.95 mA, base current is 0.05mA, Find value of α . 4
 (b) Compare common base and common emitter of a transistor. 6
13. Justify how transistor can act as an amplifier with support of circuit and waveform in CE mode. 10
14. Define and correlate JFET parameters γ_d , g_m and μ . 10
15. (a) Explain working of N channel JFET. 5
 (b) Compare enhancement and depletion modes of MOSFET. 5
16. (a) Sketch and discuss VI characteristics of UJT. 5
 (b) List the applications of DIAC and TRIAC. 5
17. Explain constructional features and operation of SCR. 10
18. Describe the steps in fabricating monolithic IC's with diagrams. 10
19. (a) List the features of LED bulbs. 5
 (b) List the applications of photo diode. 5

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