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Question Paper Code: 40035

B.E. DEGREE EXAMINATION, APRIL/MAY 2018

Second Semester

Electronics and Communication Engineering EC 8252 – ELECTRONIC DEVICES

(Common to Electronics and Telecommunication Engineering and Medical Electronics Engineering)
(Regulations 2017)

Time: Three Hours

Maximum: 100 Marks

Answer ALL questions

PART - A

 $(10\times2=20 \text{ Marks})$

- 1. State the relationship between diffusion capacitance and diode current in a PN diode.
- 2. Write down the diode current equation.
- 3. Define Early Effect.
- 4. Why BJT is called as current controlled device?
- 5. What is pinch off voltage?
- 6. State the application and difference between BJT and FET.
- 7. What is a FinFET?
- 8. What is referred as CNTFET?
- 9. What is the effect of temperature in Solar Cell?
- 10. Draw the symbol and equivalent circuit of TRIAC.

PART - B

 $(5\times13=65 \text{ Marks})$

11. a) Demonstrate the working mechanism of a PN junction diode in both forward bias and reverse bias conditions.

(OR)

b) Analyze the impact of temperature on V-I characteristics of PN diode.



12. a) Construct and demonstrate the working mechanism of CE configuration of BJT.

(OR)

- b) Construct and demonstrate the working mechanism of CB configuration of BJT.
- 13. a) Illustrate the working mechanism of JFET with necessary diagram.

(OR)

- b) Discuss your understanding on MOSFET detailing the types, construction and characteristics.
- 14. a) Illustrate with necessary diagram, the working mechanism of a LASER diode.

(OR)

- b) Discuss in detail about Zener and Tunnel diode.
- 15. a) Explain the working and characteristics of SCR and its applications.

(OR)

b) Enumerate the construction and operation of LED.

PART - C

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(1×15=15 Marks)

16. a) Design and analyze a NPN bipolar junction transistor using Eber moll transistor model.

(OR)

b) Explain the working and characteristics of DIAC and its applications.