1292

Code : 15EC21T

Register Number | | | | | | | |

II Semester Diploma Examination, April/May-2018

BASICS OF SEMICONDUCTOR DEVICES

Time : 3 Hours] **[Max. Marks : 100**

Note : (i) Answer any **six** questions from Part – **A**.
(ii) Answer any **seven** questions from Part – **B**.

PART – A

6 × 5 = 30

1. State the properties of semiconductors. **5**

2. Define α and β, deduce the relation between them. **5**

3. Define Transistor. Explain transistor circuit configurations. **5**

4. Define JFET parameters. **5**

5. Explain working of N-channel JFET with a neat diagram. **5**

6. Write a short note on construction of TRIAC. **5**

7. List the classification of IC's by structure. **5**

8. Explain the terms photoemissive, photoconductive and photovoltaic effect. **5**

9. List the applications and advantages of LED. **5**

PART – B **7 × 10 = 70**

10. (a) Define Doping. Compare intrinsic and extrinsic semiconductor. **5**
    (b) Explain N-type semiconductor. **5**

11. (a) Explain the reverse characteristics of zener diode. **5**
    (b) Explain the application of diode as a switch. **5**

12. (a) Explain the working of PNP transistor. **5**
    (b) Explain the input characteristics of CB configuration. **5**

13. (a) Justify the need for heat sink. **5**
    (b) Write a note on transistor as Emitter follower. **5**

14. (a) Compare BJT and JFET. **5**
    (b) Explain the structure of P-channel MOSFET. **5**

15. (a) Explain the drain characteristics of P-channel JFET. **5**
    (b) Compare JFET and MOSFET. **5**

16. Explain the steps involved in the fabrication of monolithic IC. **10**

17. Briefly explain working principle and characteristics of UJT. **10**

18. (a) Write a short note on Opto-coupler. **5**
    (b) Explain working of LED. **5**

19. Explain the V-I characteristics of SCR. **10**