HDH-003-1271004 Seat No. _____

M. Sc. (ECI) (Sem. I) (CBCS) Examination

November / December – 2017

Introduction to Electronics Devices & Circuit : Paper - IV

(New Course)

Faculty Code : 003

Subject Code : 1271004

Time : $2\frac{1}{2}$ Hours] [Total Marks : **70**

Instructions: (1) All questions carry equal marks.

(2) Figures on right hand side indicate marks.

1 Answer the following : (Any seven) **14**

(1) What is semiconductor ?

(2) Define conductor and insulator.

(3) What are P-type and N-type semiconductor materials ?

(4) Write only the names of fabrication methods of PN-junction diode.

(5) What is depletion barrier in PN-junction diode ?

(6) Draw the symbol of Tunnel diode.

(7) Write any three applications of transistor.

(8) Write the working principle of Zener diode.

(9) Define the rectifier.

(10) What are full wave and half wave rectifier ?

2 Answer the following : (Any two) **14**

(1) Write a note on intrinsic and extrinsic types of semiconductors. **7**

(2) Write a note on conductor, semiconductor and insulator materials. **7**

(3) Explain avalanche and Zener breakdown in diode. **7**

3 Answer the following : **14**

(1) Write a note on Tunnel diode. **7**

(2) Write a note on PN-junction diode. **7**

OR

3 Answer the following : **14**

(1) Write applications and advantages of semiconductor material in electronics. **7**

(2) Explain Varactor diode with suitable figure. **7**

4 Answer the following : **14**

(1) Discuss the half wave rectifier with suitable circuit diagram. **7**

(2) Discuss the full wave rectifier with suitable circuit diagram. **7**

5 Answer the following (Any two) : **14**

(1) Discuss Choke-input or L-section filter. **7**

(2) Explain Bleeder resistor in detail. **7**

(3) Discuss the operation of NPN transistor in detail. **7**

(4) Explain transistor biasing and different operating conditions for a transistor. **7**
