



**PBM-003-1271004** Seat No. \_\_\_\_\_

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

**November / December - 2018**

**Introduction to Electronic Devices  
and Circuits : Paper - 04**

**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 floating zone ?
- (2) Why copper is a good conductor ?
- (3) What is P-N junction diode ?
- (4) What is the significance of arrow head in the transistor symbol ?
- (5) What is punch through effect ?
- (6) Why the channel of a JFET is never completely closed at the drain end ?
- (7) Why BJTs are called bipolar devices while FETs are called unipolar devices ?
- (8) What is a rectifier ? Explain in brief.
- (9) What is a reverse saturation current ?
- (10) What is hole current ?

**2** Answer the following : (any two)

- (1) Write a note on ideal diode.
- (2) Write applications of P-N junction diode. **7**
- (3) What is the importance of valence shell and valence electron ? Explain in brief. **7**

- 3** Answer the following :
- (1) Draw and explain zener diode. **7**
  - (2) Write in detail on tunnel diode and its construction. **7**
- OR**
- 3** Answer the following :
- (1) Write a note on schottky diode. **7**
  - (2) Write a note on half wave rectifier. **7**
- 4** Answer the following :
- (1) Sketch and explain bleeder resistor. **7**
  - (2) Explain Transistor action with suitable diagram. **7**
- 5** Answer the following : (any **two**)
- (1) Write important points regarding working transistors. **7**
  - (2) Explain basic construction and operation of Junction Field Effect Transistor. **7**
  - (3) Write applications of FETs. **7**
  - (4) Explain transistor amplifier circuit performance in h-parameters. **7**
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