

GUJARAT TECHNOLOGICAL UNIVERSITY
PDDC- SEMESTER I- • EXAMINATION -WINTER- 2016

Subject Code: X11101**Date:07/01/2017****Subject Name: Basic Electronics****Time: 10:30 AM to 1:00 PM****Total Marks: 70****Instructions:**

- 1. Attempt all questions.**
- 2. Make suitable assumptions wherever necessary.**
- 3. Figures to the right indicate full marks.**

- Q.1** (a) In relation to transistors explain Miller's theorem and its dual. **07**
(b) Draw and explain the V-I characteristics of ideal and practical diode. **07**
- Q.2** (a) Explain energy band diagram of crystals and semiconductors with the help of diagram. **07**
(b) Define mobility, conductivity and diffusion **07**
- OR**
- (b) What is breakdown? Explain the breakdown process in diode. **07**
- Q.3** (a) Describe Hall effect. **07**
(b) In relation to diode explain transition capacitance and diffusion capacitance. **07**
- OR**
- Q.3** (a) Explain bridge rectifier. **07**
(b) Enlist different types of diodes. Explain working of any one diode **07**
- Q.4** (a) What is clipping? Explain clipping with the help of example. **07**
(b) What are the different configurations of BJT? Explain transistor as an amplifier. **07**
- OR**
- Q.4** (a) In CE configuration explain the different operating regions of transistor. **07**
(b) Write a short note on comparator. **07**
- Q.5** (a) Discuss thermal runaway and thermal stability. **07**
(b) Write a short note on emitter follower. **07**
- OR**
- Q.5** (a) What is FET? Compare JFET and MOSFET. **07**
(b) What are power amplifiers? Give the classification and comparison of all types of power amplifiers. **07**
