

GUJARAT TECHNOLOGICAL UNIVERSITY
PDDC - SEMESTER-III • EXAMINATION – WINTER • 2014

Subject Code: X 30901**Date: 24-12-2014****Subject Name: Basic Electronics****Time: 10:30 am - 01:00 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) Explain forward and reverse characteristics of PN junction diode. Also explain its current components during forward and reverse bias. 7
- (b) Explain full wave rectifier with centre tape and derive its output equation. 7
- Q.2** (a) Give the comparison between different transistor configurations 7
- (b) Give the comparison between half-wave rectifier, full-wave rectifier with centre tape and full-wave bridge rectifier 7
- OR**
- (b) Explain the Hall effect. 7
- Q.3** (a) What is construction of Photo transistor? Explain its characteristics with its one application. 7
- (b) What is the stability factor? Derive the equation of it for fixed bias circuit. 7
- OR**
- Q.3** (a) Explain working of FET under NO bias and bias condition. 7
- (b) Explain working of FET as VVR. 7
- Q.4** (a) Explain push pull class B amplifier. 7
- (b) Explain series and parallel clipper with diode. 7
- OR**
- Q.4** (a) Explain zener diode as a voltage regulator. 7
- (b) Explain the working of transistor in CE configuration. Also draw its input-output Characteristics. 7
- Q.5** (a) Classify the power amplifiers based on position of Q point, Operating cycle and Efficiency. 7
- (b) Why transistor biasing is required? Explain any one method in details. 7
- OR**
- Q.5** (a) Explain Class A and Class B transistor amplifier. 7
- (b) Explain energy band diagram of conducting, semiconducting and insulating material 7
