

## FACULTY OF INFORMATICS

B.E. 2/4 (IT) I-Semester (Main) Examination, November 2013

Subject : Micro Electronics

Time : 3 Hours

Max. Marks: 75

**Note: Answer all questions of Part - A and answer any five questions from Part-B.****PART – A (25 Marks)**

1. Draw the circuit symbols of zener diode, BJT. (2)
2. Briefly explain the principle of operation of a varactor diode. (3)
3. List the different terminals of MOSFET. (2)
4. How a BJT can be operated as a switch? (3)
5. Name different feedback topologies. (2)
6. What is an Amplifier? Which type of feedback is used in it? (3)
7. List the properties of an ideal operational amplifier? (3)
8. Draw the circuit for comparator using Op-amp. (2)
9. Define propagation delay. (2)
10. What are PUN and PDN? (3)

**PART – B (50 Marks)**

- 11.(a) What is a limiting circuit? Explain the operation of any two types of limiting circuits. (6)
- (b) List the differences between PN diode and light emitting diode. (4)
12. Draw and explain the small signal equivalent circuit models of BJT. (10)
13. What is an oscillator? Explain the operation of an RC phase shift oscillator. (10)
14. Explain the operation of a mono stable multi vibrator. (10)
15. Explain about VTC of a CMOS inverter. (10)
- 16.(a) Explain the physical structure of an n-channel MOSFET. (6)
- (b) Explain the use of PN diode in the limiting circuit. (4)
17. Write short notes on any two of the following:
  - (a) Negative feedback (3)
  - (b) JFET (4)
  - (c) Op-amp as integrator (3)

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