**D 30910** (Pages : 2) Name.....

Reg. No.....



# THIRD SEMESTER B.TECH. (ENGINEERING) DEGREE EXAMINATION OCTOBER 2012

## IT/CS 09 305/PTCS 304—ELECTRONIC CIRCUITS

(2009 admissions)

Time : Three Hours Maximum : 70 Marks

### Part A

*Answer* **all** *questions.*

1. What is 'Esaki' diode ? Why is it called so ?
2. Draw the equivalent circuits of pin diode.
3. Enumerate the advantages of digital switching.
4. What is a latch ?
5. State the applications of magnetic bubble memories.

(5 × 2 = 10 marks)

### Part B

*Answer any* **four** *questions.*

6. Differentiate LED from photodiode. Explain the difference.
7. Explain the principle of Opto coupler.
8. Differentiate CMOS from NMOS technologies.
9. Draw a non-linear Op-amp comparator and explain it.
10. Explain the concept of SSI and MSI.
11. Differentiate SRAM from DRAM.

(4 × 5 = 20 marks)

### Part C

*Answer* **all** *questions.*

12. (a) Explain the operating principles of the following diodes :

    (i) Schottky diode. (ii) Varistor.

    (iii) Back diodes. (iv) Laser diode.

    *Or*

    (b) With a neat circuit diagram, explain the principle of operation of a bistable multivibrator.

13. (a) Explain the principle of Depletion mode. MOSFET amplifiers with neat diagrams.

    *Or*

    (b) Draw the circuit diagram for Op-amp comparator with zero reference voltage and explain it in detail.

Turn over

14. (a) Compare and contrast all the logic families. Explain the comparison parameters.

*Or*

(b) Explain the features and applications of ECL and CMOS logic gates with neat diagrams.

15. (a) (i) Explain the basic concept of memory. (5 marks)

(ii) Give an account on 'PROM'. (5 marks)

*Or*

(b) Write technical notes on :

(i) Flash ADC. (5 marks)

(ii) Sample and hold circuit. (5 marks)

[4 × 10 = 40 marks]