Roll No. .....

67043

MCA 1st Semester w.e.f. Dec. 2012 with new notes full and re-appear candidates Examination– December, 2013

Digital Design

Paper MCA-103

Time : 3 hours ***Max. Marks : 80***

Before answering the questions, candidates should ensure that they have been supplied the correct and complete question paper. No complaint in this regard will be entertained after the examination.

Note : **Question No. 1 is compulsory.** Attempt **four** more questions selecting **one** from each Unit.

1. Answer the following questions briefly :

   (a) Define dynamic RAM. 2

   (b) Write uses of 1's complement. 2

(c) Describe two advantages of floating point numbers. 2

(d) Discuss uses of Gray code. 2

(e) Explain ROM and their uses. 2

(f) What is modules of a counter ? 2

(g) Write advantages of truth tables. 2

(h) Convert decimal number 76.25 to its binary equivalent. 2

UNIT – I

2. (a) What is binary multiplicity ? How is it useful and used ? Discuss with examples. 8

(b) Discuss uses and advantages of BCD and Hamming codes with examples. 8

3. Explain the following briefly with suitable examples :

(i) Convert binary number 1001111011.1010 to its octal and decimal equivalents. 8

(ii) Addition and subtraction using 2's complement methods. 8

UNIT – II

4. (a) What is Boolean algebra ? How is it useful and used ? Explain with examples. 8

   (b) Discuss uses and advantages of Karnaugh map with suitable examples. 8

5. Describe the following with examples :

   (a) Quine-Mc-Cluskey tabular method and its uses. 8

   (b) NMOS and PMOS logic families. 8

UNIT – III

6. (a) What is flip-flop ? How is it used and useful ? Explain working of D-flip flop with diagram. 8

   (b) Differentiate between adder and subtractor with suitable examples. 8

7. Explain the following with examples :

(i) Contrast between synchronous asynchronous inputs. 8

(ii) Parity between generator and checker. 8

UNIT – IV

8. (a) What is binary ripple counter ? How is it used and different from other counters ? Discuss with examples. 8

(b) Explain pre-settable counters with suitable examples. 8

9. Explain the following with examples :

(i) Up/Down counters. 8