97664

B.C.A 1st Semester (New Scheme) w.e.f. 2012 Examination– December, 2012

Logical Organization of Computers-I

Paper – BCA-104

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 : Students will be required to attempt **five** questions in all. **Question No. 1 is compulsory.** In addition to it, student will have to attempt **four** more questions selecting one question from each Unit.

1.　Explain the following :　　　　　16

　(i)　EBCDIC

　(ii)　BCD codes

　(iii)　Canonical forms of Boolean functions

(iv) Karnaugh maps

(v) Universal hates

(vi) Multilevel NOR circuits

(vii) Comparator

(viii) Parallel Binary Subtractor

UNIT - I

2. (i) What do you mean by Error Detecting and Error Correcting Codes ? Explain in detail. 8

(ii) What do you mean by ASCII and EBCDIC ? Why these codes are normally used ? Explain. 8

3. (i) What do you mean by Fixed Point and Floating Point representation of numbers ? Explain. 8

(ii) What do you mean by Binary Arithmetic ?
Explain in detail.   8

UNIT - II

4. (i) What do you mean by Simplification of
logical functions using K-map ? Explain.
                                                8

(ii) Minimize the four variable logic function.
                                                8

$$f(A,B,C,D) = (A+B+\overline{C}+\overline{D}).(\overline{A}+C+\overline{D}).$$
$$(\overline{A}+B+\overline{C}+\overline{D}).\ (\overline{B}+C).$$
$$(\overline{B}+\overline{C}).\ (A+\overline{B}).\ (\overline{B}+\overline{D}).$$

5. (a) What do you mean by Truth Tables ?
Explain.   8

(b) Explain in detail the Venn Diagram and
also explain why is it used ?   8

UNIT - III

6. (a) Explain in detail AND-OR-INVERT and
OR-AND-INVERT   implementation   of
digital circuits.   8

(b) What do you mean by Digital Signals ? Explain. 8

7. (a) Explain in detail the multilevel NAND and NOR circuits. 8

(b) Give a brief explanation about the Universal gates. 8

UNIT - IV

8. (a) What do you mean by BCD to 7 segment Decoder ? Explain. 8

(b) Give a brief description about Encoders. 8

9. Explain the following : 16

(a) Multiplexer

(b) Half Adder.

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