II Semester B.Sc. (I.T.) Examination, June/July 2010
DIGITAL COMPUTER FUNDAMENTALS
(Freshers)

Time : 3 Hours Max. Marks: 75

Instruction *: Answer* ***all*** *questions from Part* ***A****, and answer* ***any five*** *from Part* ***B****.*

PART – A **(10×2+5×1=25)**

1. What do you mean by Analog signal ?
2. Represent $275_{(10)}$ in binary.
3. Write the steps to convert decimal faction to binary.
4. What are floating point numbers ?
5. What are Fundamental gates ?
6. Explain Universal gate.
7. State Demorgan's theorem.
8. What do you mean by don't care condition ?
9. Define Demultiplexer.
10. Write the logic symbol and truthtable of Positive and Negative edge triggered J-K flip flops.
11. Briefly explain the following :
    a) BCD
    b) ASCII
    c) Distributive Law
    d) Encoder
    e) EPROM.

P.T.O.

PART – B

Answer **any five** questions : **(5×10=50)**

1. Perform the following :
   i) $10011_{(2)} = ?_{10} = ?_{8}$
   ii) $CA02_{(16)} + FCA_{(16)} = ?$
   iii) $275_{(8)} = ?_{10} = ?_{16}$
   iv) $160_{(10)} = ?_{(BCD)}$
   v) $16.75_{(10)} = ?_{(2)}$
2. What do you mean by Combinational Logic Circuits ? Where they are used ?
3. What is a gate ? How can we convert NAND gate to AND, OR and NOT gate ?
4. Write the steps to simplify given SOP expression using K-MAP with an example.
5. Explain the applications of multiplexer.
6. What are the various Combinational Function Devices ?
7. How can a JK Flip Flop be converted to a D Flip Flop and T Flip Flop ?
8. Explain the difference between Static and Dynamic RAM.

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