Oct. | Nov. - 2015

P.G.D.C.A. Semester – 1

Paper – 103: Logical Organization of Computer

Time: 3 Hours Code: 25703 **Total Marks: 100**

Q.1 **Convert the following:** [20]

a. $(23.85)_{10} = (?)_2$
b. $(E8D6)_{16} = (?)_8$
c. $(11111010)_2 + (10000111)2 = (?)_2$
d. $(123.746)_{10} = (?)_8$

OR

Q.1 **Convert the following:** [20]

a. $(27)_{10} = (?)_2$
b. $(396)_{10} = (?)_8$
c. $(1001)_2 = (?)_{16}$
d. $(1011101)_2 = (?)_{16}$

Q.2 **Answer the following questions:** [20]

a. Explain : Instruction Execution Cycle
b. What is the difference between serial and parallel instruction execution?
c. Explain the Block diagram of Computer in detail
d. Write a short note on ASCII

OR

Q.2 **Answer the following questions:** [20]

a. Differentiate between Main Memory & Secondary Memory
b. Explain the types of I/O devices.
c. Draw Circuit Diagram of Encoder.
d. Explain the concept of CPU Organization in detail

Q.3 **Answer the following questions:** [20]

a. What do you mean by logic Gates? Explain in detail
b. Verify the following Boolean Laws.
   1. A.A=A 2. A+A = 1
c. Draw Circuit Diagram of Half Subtractor
d. Draw Symbol of Universal Logic Gate and Give their truth-table.

OR

Q.3 **Answer the following questions:** [20]

a. State two Demorgan's theorm
b. Draw Circuit Diagram of Half Adder
c. Explain the concept of SOP
d. Draw circuit diagram of 3 input OR Gate using diode.

Q.4 **Answer the following questions:** [20]

a. Draw circuit with truth table: F=(A+B+C) (A'B') (A' + B')
b. Draw circuit of 4 bit comparator.
c. What is the purpose of multiplexer? Draw circuit of 1 bit – 4 lines multiplexer
d. Explain : JK Flip Flop

OR

Q.4 **Answer the following questions:** [20]

a. Give the concept about half adder with gate diagram
b. Various types of ICs
c. Explain RS Flip Flop
d. Explain : Buffer and Shifting .

Q.5 **Answer the following questions:** [20]

a. Explain impact & nonimpact printer in detail
b. What is memory? Explain volatile and non-volatile memory in detail.

OR

Q.5 **Answer the following questions:** [20]

a. Discuss the architecture of Microprocessor.
b. What are different addressing modes? Explain their important with example.
