MCA-02

June - Examination 2016

MCA Ist Year Examination

Digital Logic

Paper - MCA-02

Time : 3 Hours] **[Max. Marks :- 80**

Note: The question paper is divided into three sections A, B and C. Write answers as per given instructions.

Section - A $8 \times 2 = 16$

(Very Short Answer Questions)

Note: Answer **all** questions. As per the nature of the question delimit your answer in one word, one sentence or maximum upto 30 words. Each question carries 2 marks.

1) (i) What is use of fixed point representation?

(ii) What is statement of duality property?

(iii) What is full form of ASCII?

(iv) What is SRAM?

(v) Write any two types of decimal to binary conversions?

(vi) What is the flow of BCD?

(vii) Write any two benefits of shift registers?

(viii) What is ROM?

Section - B

$4 \times 8 = 32$

(Short Answer Questions)

Note: Answer **any four** questions. Each answer should not exceed 200 words. Each question carries 8 marks.

2) Discuss the basic 2-input Multiplexer.

3) How data distributors work?

4) Discuss decimal to BCD encoder.

5) Simplify the following Boolean expression:

F = ABC + AB'CD'+A'C'+BCD'

6) Discuss serial-in-parallel out register.

7) Describe T flip flop with suitable diagram and functionality.

8) Describe half subtractor and full subtractor with diagram and truth tables.

9) Explain the universal gate property of NOR gate for XOR, OR gate formation?

Section - C

$2 \times 16 = 32$

(Long Answer Questions)

Note: Answer **any two** questions. You have to delimit your each answer maximum upto 500 words. Each question carries 16 marks.

10) Design a 4-bit Parallel-in-serial-out shift register with neat sketch.

11) Explain the working and detailed classification of serial to parallel converter.

12) Write a short note on:

    a) Encoders

    b) Applications of shift registers

13) Explain the working and basic structure of DRAM.

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