

(Following Paper ID and Roll No. to be filled in your Answer Books)

Paper ID : 2289912

Roll No.

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MCA

Regular Theory Examination (Odd Sem-I), 2016-17

COMPUTER ORGANIZATION & ARCHITECTURE

Time : 3 Hours

Max. Marks : 70

SECTION - A

1. Attempt all parts. All parts carry equal marks. Write answer of each part in short. (5×2=10)
 - a) Convert the following
 - i) $(356.55)_{10} = (?)_2$
 - ii) $(D4C)_{16} = (?)_8$
 - b) What do you mean by Bus Arbitration?
 - c) What do you understand by wide Branch Addressing? Explain.
 - d) Give the name of five addressing modes.
 - e) Write any three characteristics of RISC architecture.

SECTION - B

Note: Attempt any five questions from this section.
(5×8=40)

2. Use the K.map to minimize the following standard SOP expression:

$$AB'C + A'BC + A'B'C + A'B'C' + AB'C'$$

3. Write flowchart based booth multiplication algorithm, and also multiply the two numbers - 9 and -13 using booth multiplication algorithm.
4. Write down the IEEE standards for floating point numbers, also represent the floating point number 1.01101×2^{-11} in IEE single precision format
5. What do you understand by hard wired control logic? Explain with suitable diagram.
6. Write a program to evaluate the arithmetic statement:

$$X = (A - B + C * (D * E - F)) / G + H * K$$

Using a general register computer with two address instruction.

7. What do you mean by asynchronous data transfer? Explain strobe controlled and handshaking mechanism for asynchronous data transfer.

8. What is DMA? Explain DMA operation with a suitable diagram.
9. What is the difference between instruction stream and data stream? What is Flynn's classification about computer system?

SECTION - C

Note : Attempt any two questions from this section.

(2×10=20)

10. What is difference between 2D and 2½ D memory organizations? Explain it with the help of suitable examples.
11. Compare isolated and memory mapped I/O. Also give merits and demerits of both.
12. What is pipe lining? How many different type of pipe lining are there? Explain in detail.

