220202

May, 2019
MCA - II SEMESTER
Computer Organization & Architecture (MCA-17-104)

Time : 3 Hours]

[Max. Marks : 75

Instructions :

1. It is compulsory to answer all the questions (1.5 marks each) of Part-A in short.
2. Answer any four questions from Part-B in detail.
3. Different sub-parts of a question are to be attempted adjacent to each other.

PART–A

1. (a) Explain the concept of stored program in computer? (1.5)

   (b) What is a bus transfer? (1.5)

   (c) How many types of instruction are used in computer system? (1.5)

   (d) What is a hardwired control unit? (1.5)

   (e) Compare the advantages of a RISC and CISC processor. (1.5)

   (f) Why associative memory is used in computer system. (1.5)

(g) Compare programmed I/O and interrupt initiated I/O. (1.5)

(h) Write any two arithmetic and data transfer operation on instruction set. (1.5)

(i) Discuss the basic concept of pipeline. (1.5)

(j) What is an Amdahl law? (1.5)

PART-B

2. (a) Explain the Flynn classification of computer with proper diagram. (10)

(b) What are the micro operations? Explain with examples. (5)

3. (a) What are the instruction Codes? Explain. (5)

(b) Draw the flow chart of Instruction cycle and explain in details. (10)

4. What is a micro programmed control unit? Explain the micro instruction and address sequencing. (15)

5. (a) Write a program to evaluate the arithmetic statement X = (A + B) * (C + D) using general register type computer with three address instruction. (5)

(b) What are the addressing modes? Explain with proper examples. (10)

6. (a) What is the need of memory Hierarchy? Explain the concept of virtual memory. (5)

(b) Why I/O interface are used to interface I/O devices to the system? Discuss the operating principle of DMA. (10)

7. What are the goals of parallelism? Explain its architectural classification schemes and parallel processing application. (15)

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