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MCA-05/PGDCA-05/M.SC (IT)-05
Computer Organization and Architecture
Master of Computer Application/P.G.Diploma in
Computer Application/Master of Science in information
Technology (MCA/PGDCA/MSc.IT-11/12/16/17)
Examination 2021 (Winter)

Time : 2 Hours   **Max. Marks:80**

Note : This paper is of eighty (80) marks divided into two (02) Sections A and B. Attempt the questions contained in these sections according to the detailed instructions given therein.

Section-A
(Long Answer-type questions)

Note: Section 'A' contains Five (05) long-answer-type questions of Twenty (20) marks each. Learners are required to answer any two (02) questions only.

(2 x 20=40)

Q.1   What do you mean by Addressing Mode? Discuss different types of addressing modes including the advantages and disadvantages of each mode.

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Q.2 Explain the operation of DMA using a block diagram. Give an example application of DMA data transfer.

Q.3 Discuss any five characteristics of RISC architecture. What are the advantages of using large register file in these machines? Explain using suitable illustration.

Q.4 What is Pipelining? Explain the instruction pipeline using an illustration. What are the various problems faced by instruction pipeline?

Q.5 Write short notes on any three from the following:
   a.   Cache Memory
   b.   Addressing Modes
   c.   CPU registers
   d.   Data Path

Section-B
(Short Answer-type questions)

Note: Section 'B' contains Eight (08) short-answer-type questions of Ten (10) marks each. Learners are required to answer any four (04) questions only.

(4 x 10=40)

Q.1 Briefly Describe the hardware organization of associative memory. Also discuss the read and write operation for the associative memory.

Q.2 Explain logical and physical address in memory unit.

Q.3 Explain the procedure to initiate DMA by CPU.

Q.4 How can an interleaved memory mechanism be used to improve the processing speed of a computer system?

Q.5 Explain the differences between sequential access and direct access storage devices with the help of example?

Q.6 Difference between hardwired control unit and micro programmed control unit.

Q.7 What are the various types of interrupts? Explain.

Q.8 Explain the term Arithmetic Pipelining in computer organization and architecture.

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