Total No. of printed pages = 5

63/2 (SEM-1) CSIT 1·2

2021

(held in 2022)

CSIT

(Theory Paper)

Paper Code : CSIT-1·2

(Advanced Computer Organization and Architecture)

Full Marks – 80

Time – Three hours

The figures in the margin indicate full marks for the questions.

1. Choose the appropriate one : 1×10=10

(i) Which of the following is not considered as a peripheral device ?

(a) CPU

(b) Keyboard

(c) Monitor

(d) All of the above

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(ii) Which of the following allows simultaneous write and read operations ?

(a) ROM (b) EROM

(c) RAM (d) None of the above

(iii) Which of the following format is used to store data ?

(a) Decimal (b) Octal

(c) BCD (d) Hexadecimal

(iv) Which of the following memory of the computer is used to speed up the computer processing ?

(a) Cache memory (b) RAM

(c) ROM (d) None of the above

(v) Computer address bus is

(a) Multidirectional

(b) Bidirectional

(c) Unidirectional

(d) None of the above

(vi) Subtraction in computers is carried out by

(a) 1's complement

(b) 2's complement

(c) 3's complement

(d) 9's complement

(vii) Which of the following memory unit communicates directly with the CPU ?

(a) Auxiliary memory

(b) Main memory

(c) Secondary memory

(d) None of the above

(viii) The collection of 8-bits is called as

(a) Byte (b) Nibble

(c) Word (d) Record

(ix) What does MIMD stand for ?

(a) Multiple Instruction Memory Data

(b) Multiple Instruction Multiple Data

(c) Memory Instruction Multiple Data

(d) Memory Information Memory Data

(x) RISC stands for

(a) Reduce Instruction Set Computer

(b) Risk Instruction Sequential Compilation

(c) Risk Instruction Source Compiler

(d) None of the above.

2. Answer any *five* questions : 2×5=10

(i) What is Instruction Set ?

(ii) What is a Parallel Adder ?

(iii) What is Bus System of a processor ?

(iv) What is Hit Ratio of a Cache Memory ?

(v) What is Flynn's Classification ?

(vi) What is Flip-Flop ?

3. Answer any *six* questions : 5×6=30

(i) Write about I/P and O/P characteristics of a Carry Look Ahead Adder.

(ii) What is Virtual Memory ? Describe.

(iii) What is the concept of Pipelining ? Explain.

(iv) Design a (1:8) Demultiplexer.

(v) Design a (3:8) Decoder.

(vi) What is the limitation of R-S Flip-Flop ? How it can be overcome ?

(vii) State and prove the De Morgan's Theorem.

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4. Answer any *three* questions : 3×10=30

(i) What is Mapping ? Write about all Mapping Technique of a Cache Memory.

(ii) Reduce the following equation by using K-Map :

$$Y(A,B,C,D) = \Sigma(1,2,5,6,8,10,12,15)$$

(iii) Explain about Hardwired Control Unit.

(iv) What is Addressing Mode ? Explain in details.

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