

SIXTH SEMESTER B.Sc. DEGREE EXAMINATION, MARCH/APRIL 2015

(U.G-CCSS)

Core Course—Computer Science

CS 6B 15—COMPUTER ORGANISATION AND ARCHITECTURE

(2012 Admissions)

Time : Three Hours

Maximum : 30 Weightage

I. Answer all *twelve* questions :

- 1 The load instruction is mostly used to designate a transfer from memory to a processor register known as _____.
- 2 MIMD stands for _____.
- 3 The BSA instruction is _____.
- 4 A floating point number that has a 0 in the MSB of mantissa is said to have _____.
- 5 Memory unit accessed by content is called _____.
 - (a) Associative Memory.
 - (b) Read Only Memory.
 - (c) Programmable memory.
 - (d) Virtual Memory.
- 6 The register that keeps track of instructions in memory is :
 - (a) PC.
 - (b) IR.
 - (c) AR.
 - (d) AC.
- 7 A Stack-organized Computer uses instruction of _____.
 - (a) Indirect addressing.
 - (b) Two addressing.
 - (c) Zero addressing.
 - (d) Index addressing.
8. Write Through technique is used in which memory for updating the data :
 - (a) Virtual memory.
 - (b) Main memory.
 - (c) Cache memory.
 - (d) Auxiliary Memory.
9. In a memory-mapped I/O system, which of the following will not be there ?
 - (a) LDA.
 - (b) IN.
 - (c) ADD.
 - (d) OUT.

Turn over

- 10 Floating point representation is used to store _____.
- 11 The pipeline that operates on a stream of instruction by overlapping the phases of instruction cycle is _____.
- 12 In DMA the data transfer is controlled by _____.

(12 × ¼ = 3 weightage)

II. Answer all *nine* questions.

- 13 What is the difference between direct and indirect address instruction ?
- 14 Compare volatile and non-volatile memory. Give example for both.
- 15 Define a microprogrammed control Unit.
- 16 What is multiprogramming ?
- 17 Define virtual memory. Why is it used ?
- 18 What is pipelining ?
- 19 Define effective address.
- 20 Define hit and miss. What is meant by hit ratio ?
- 21 Distinguish between address space and memory space.

(9 × 1 = 9 weightage)

III. Answer any *five* questions.

22. Explain the different phases of an instruction cycle.
23. With the help of a block diagram explain the control unit of basic computer.
24. Define :
 - (a) Microoperation.
 - (b) Microinstruction.
 - (c) Microprogram.
 - (d) Microcode.
25. What is associative memory ? Explain the block diagram of associative memory.
26. Differentiate between Isolated and memory mapped I/O.
27. Which are the different types of mapping techniques ?
28. Explain attached array processor.

(5 × 2 = 10 weightage)

IV. Answer any *two* questions.

29. With the help of block diagrams explain RAM and ROM organization ?
30. What are Instruction pipeline ? Explain how the instruction cycle in the CPU can be processed with a four segment pipeline ?
- 31 Explain DMA controller in detail ?

(2 × 4 = 8 weightage)