C 80097 (Pages : 3) Name.....

Reg. No.....

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 O 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)