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SIXTH SEMESTER B.Sc. DEGREE EXAMINATION, MARCH/APRIL 2016

(UG—CCSS)

Computer Science—Core Course

CS 6B 15—COMPUTER ORGANISATION AND ARCHITECTURE

(2012 Admission onwards)

Time : Three Hours   Maximum : 30 Weightage

I. Answer all *twelve* questions :

1 A computer with 12 address buses can address how many memory locations ?

2 The register that stores address of stack is ————.

3 Transferring data from main memory to cache is called ————.

4 Cache memory works on the principle of :

    (a) Locality of data.   (b) Locality of memory.

    (c) Locality of reference.   (d) Locality of reference and memory.

5 Memory unit that communicates directly with the CPU is called the ————.

    (a) Main memory.   (b) Secondary memory.

    (c) Register.

6 CISC stands for ————.

7 The instruction that cause transfer of data from one location to another without changing the binary information content are ————.

8 Interrupts which are initiated by an instruction are ————.

    (a) Internal.   (b) External.

    (c) Hardware.   (d) Software.

9 In Virtual memory system , the address used by the programmer by the programmer belongs to :

    (a) Memory space.   (b) Address space.

    (c) Physical address.   (d) Main memory address.

10 SIMD computer organization corresponds to ————.

Turn over

11　In GRO, when the binary code for selector A is 000 then the multiplexer A selects input from —————.

12　————— is a program control instruction.

    (a)　IN.　　　　　　　　　　(b)　SETC.

    (c)　SKIP.　　　　　　　　　(d)　None of these.

(12 × ¼ = 3 weightage)

II.　**Answer all *nine* questions :**

13　Define a cache memory. Why is it used ?

14　Define a stack. What are its operations ?

15　Define control memory and control address register.

16　Define a multiprogrammed control unit.

17　What is meant by locality of reference ?

18　What do you mean by multiprocessing systems ?

19　What is a RISC pipeline ?

20　What is meant by hardwired control ?

21　Define the track and sector in a magnetic disk.

(9 × 1 = 9 weightage)

III.　**Answer any *five* questions :**

22　Explain the various computer instruction formats.

23　What are asynchronous data transfer ?

24　Explain the block diagram of a typical RAM chip.

25　Explain memory hierarchy in detail.

26　Give the hardware organization of associative memory.

27　Compare various types of ROM.

28　What is meant by vector processing ? Give some application areas of vector processing.

(5 × 2 = 10 weightage)

IV.　**Answer any *two* questions :**

29　What is auxiliary memory ? Explain two types of auxiliary devices.

30　What is meant by an arithmetic pipeline ? Give an example of a pipeline unit for floating point addition and subtraction.

31　Explain different types of computer instruction with suitable examples.

(2 × 4 = 8 weightage)