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(Pages : 2)

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**FIFTH SEMESTER B.Sc. DEGREE EXAMINATION, NOVEMBER 2016**

(CUCBCSS-UG)

Computer Science

**BCS 5B 08—COMPUTER ORGANIZATION AND ARCHITECTURE**

Time : Three Hours

Maximum : 80 Marks

**Part A**

*Answer all questions.  
Each question carries 1 mark.*

1. What MAR ?
2. Define bus.
3. Define hit ratio.
4. What is nibble ?
5. What is stack ?
6. Define instruction cycle.
7. What is CISC ?
8. What is SIMD ?
9. What is volatile memory ?
10. What do you mean by effective address ?

(10 × 1 = 10 marks)

**Part B (Short Answers)**

*Answer all questions.  
Each question carries 2 marks.*

11. What is the need for addressing modes ?
12. What are the advantages of pipelining ?
13. Explain the procedure to initiate DMA by the CPU.
14. Mention the advantages of Cache memory.
15. How floating point numbers are represented in memory ?

(5 × 2 = 10 marks)

**Turn over**

**Part C (Short Essays)**

*Answer any five questions.  
Each question carries 4 marks.*

16. What is instruction sequencing ? Explain.
17. What is stored program organization ? Explain.
18. What is meant by locality of reference and how does it help in faster execution of programs ?
19. Explain the bus structure of CPU.
20. Distinguish direct and indirect addressing modes with example.
21. Write notes on I/O processors.
22. Explain about cache coherence.
23. Explain booth algorithm for multiplication.

(5 × 4 = 20 marks)

**Part D (Essays)**

*Answer any five questions.  
Each question carries 8 marks.*

24. Explain the basic organization of a hard wired control unit.
25. Describe stack organization in detail.
26. Explain how the virtual address is converted into physical address in a paged virtual memory system.
27. Explain the hierarchy of memory in detail.
28. What are interrupts ? Explain how priority interrupts are being serviced.
29. Discuss about asynchronous data transfer.
30. Briefly explain about Flynn's classification of parallel computers.
31. Write short notes on :
  - (a) Memory reference instructions.
  - (b) Auxiliary memory.
  - (c) Vector processing.

(5 × 8 = 40 marks)