

**C 30338**

(Pages : 2)

Name.....

Reg. No.....

**FIFTH SEMESTER B.Sc. DEGREE EXAMINATION, NOVEMBER 2017**

(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. Define instruction cycle.
2. What is the need for registers ?
3. What is micro program ?
4. What is hit ratio ?
5. What is pipelining ?
6. What is virtual memory ?
7. What is SIMD ?
8. What are floating point numbers ?
9. What is multiplexer ?
10. What is the purpose of stack pointer ?

(10 × 1 = 10 marks)

**Part B (Short Answer)**

*Answer all questions.*

*Each question carries 2 marks.*

11. List the features of RISC machines ?
12. Differentiate volatile and non volatile memory ?
13. Distinguish between physical address and logical address.
14. What is memory interleaving ?
15. Discuss the principle behind the Booth's algorithm ?

(5 × 2 = 10 marks)

**Turn over**

**Part C (Short Essay)**

*Answer any five questions.*

*Each Question carries 4 marks.*

16. What is addressing mode and list the different types ?
17. With a neat block diagram, explain how data is transferred with the help of DMA ?
18. Differentiate static RAM and dynamic RAM.
19. Explain daisy chaining process of prioritizing interrupts.
20. Write notes on floating point arithmetic operations.
21. Explain the organization of ROM.
22. Briefly explain about I/O controllers.
23. Explain the concept of parallel processing.

(5 × 4 = 20 marks)

**Part D (Essay)**

*Answer any five questions.*

*Each Question carries 8 marks.*

24. Using a neat block diagram explain the steps involved in the basic operational concepts.
25. Draw necessary diagrams and explain the control signal generation using hardwired control.
26. Explain the virtual memory address translation with necessary tables and diagrams.
27. Discuss Direct Memory Access in detail.
28. Discuss about vector processing.
29. Describe the various mapping techniques used with cache memory.
30. What are the different instruction formats ? Explain.
31. Write short notes on :
  - (a) Instruction sequencing.
  - (b) Associative memory.
  - (c) I/O processors.

(5 × 8 = 40 marks)