D 50642 (Pages : 2) Name.....

Reg. No.....

FIFTH SEMESTER B.Sc. DEGREE EXAMINATION, NOVEMBER 2018

(CUCBCSS—UG)

B.C.A.

BCA 5B 11—COMPUTER ORGANIZATION AND ARCHITECTURE

Time : Three Hours Maximum : 80 Marks

Part A

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

1. ———— register is a general purpose processing register.
2. The timing for all registers in the computer is controlled by a ———— generator.
3. ———— memory unit is used for storing the microinstructions and treated as a control memory.
4. CISC stands for ————.
5. The ways that operands are choose during program execution is called ————.
6. ———— memory consists of internal flip-flops that store the binary information.
7. ———— is the set of addresses generated by program as they reference instructions and data.
8. A technique called ———— allows the DMA controller to transfer one data word at a time, after which it must return control of the buses to the CPU.
9. A parallel processing system is able to perform ———— data processing to achieve faster execution time.
10. The data transfer instructions in RISC are limited to ———— and ———— instructions.

(10 × 1 = 10 marks)

Part B

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

11. What is memory read cycle ?
12. What is control word ?
13. Explain the hit ratio in cache memory organization.

14. Compare a half-duplex transmission system with full-duplex transmission system.

15. Explain the basic concept of SISD.

(5 × 2 = 10 marks)

Part C

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

16. What is instruction code ? Explain.

17. Explain the control of AC register.

18. Explain register stack organization.

19. What are program control instructions ? Explain.

20. Explain associative memory organization.

21. Discuss the strobe control method of asynchronous data transfer.

22. What is MESI protocol ? Explain.

23. What is vector processing ? Discuss its applications.

(5 × 4 = 20 marks)

Part D

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

24. Discuss the control unit of a basic computer and its control timing signals with neat diagram.

25. Explain the concept of address sequencing in microprogramming.

26. Discuss various instruction formats with suitable example.

27. Explain division algorithm with the flow chart for divide operation.

28. What is memory address map ? Explain.

29. Discuss address mapping using pages in virtual memory organization.

30. What is DMA transfer ? Explain.

31. Explain instruction pipeline with suitable example.

(5 × 8 = 40 marks)