

D 70225

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Name.....

Reg. No.....

FIFTH SEMESTER B.Sc. DEGREE EXAMINATION, NOVEMBER 2019

(CUCBCSS—UG)

Computer Science

BCS 5B 07—COMPUTER ORGANISATION AND ARCHITECTURE

(2017 Admissions)

Time : Three Hours

Maximum : 80 Marks

Part A

Answer all questions.

Each question carries 1 mark.

1. Draw the logic diagram of AND gate using NOR gate.
2. Give the truth table of X-NOR gate.
3. What is T flip-flop ?
4. What is the MOD of Johnson's counter if it uses n flip-flops ?
5. What is an operation code ?
6. What is CAS ?
7. What do you mean by micro-operation ?
8. What is DMA ?
9. What is cache memory ?
10. Define polling.

(10 × 1 = 10 marks)

Part B

Answer all questions.

Each question carries 3 marks.

11. What are universal gates ?
12. Explain the differences between edge triggering and pulse triggering circuits.
13. What do you mean by address sequencing ? Explain.

Turn over

14. Define interrupt cycle.
15. Explain hit/miss ratio.

(5 × 3 = 15 marks)

Part C

*Answer any five questions.
Each question carries 5 marks.*

16. What is flip-flop ? Explain how will you convert a JK flip-flop to a D flip-flop.
17. Explain the design of full adder circuit with logic diagram and truth table.
18. What is Demultiplexer ? Design a 1-to-4 Demultiplexer circuit.
19. Explain the Serial-In-Serial-Out shift register.
20. Give the circuit representation of 4-bit synchronous counter and explain its function.
21. What is an addressing format ? Explain the differences between direct addressing mode and indirect addressing mode.
22. Write a note on virtual memory.
23. Give an account on synchronous data transfer mode.

(5 × 5 = 25 marks)

Part D

*Answer any three questions.
Each question carries 10 marks.*

24. Explain how a full adder circuit can be converted to a full subtractor with the addition of one inverter circuit.
25. Explain the Master-Slave Flip-Flop. How does it overcome the race condition of J-K flip-Flop ?
26. Explain the different types instructions with examples.
27. Explain the function and organization of microprogrammed control unit.
28. Explain the different types of Auxiliary memories.

(3 × 10 = 30 marks)