

D5BCA1802 (S3)

(PAGES 2)

Reg. No.....

Name: .....

**FIFTH SEMESTER UG DEGREE EXAMINATION, NOVEMBER 2023**

**(Supplementary – 2018 Admission)**

BCA

**CBCA5B08T: COMPUTER ORGANIZATION AND ARCHITECTURE**

**Time: 3 Hour**

**Maximum Marks: 80**

**SECTION A: Answer *all* questions. Each carries *one* mark.**

1. Differentiate between positive logic and negative logic.
2. What is processor organization?
3. Mention the flip-flop used in Johnson counter.
4. Enumerate the various modes of data transfer.
5. How many flip flops are in a decade counter?
6. Write the uses of registers.
7. What is an accumulator?
8. Explain shift register with example.
9. What do you mean by address sequencing?
10. How do you calculate hit to miss ratio?

**(10 x 1 = 10 Marks)**

**SECTION B: Answer *all* questions. Each carries *two* marks.**

11. How does ripple carry adder work?
12. Give the logic diagram and truth table of XNOR gate.
13. Explain why a two-input NAND gate is called universal gate?
14. What is the timing and control instruction cycle in computer architecture?
15. Write the advantages of micro programmed control unit.
16. What is cache memory?
17. What is handshaking in computer architecture?
18. Write short note on D flip and explain how it works.

**(8 × 2 = 16 Marks)**

**(PTO)**

**SECTION C: Answer any *six* questions. Each carries *four* marks.**

19. Describe the functions of encoders with example.
20. Explain the different types of instruction code.
21. What are the differences of flip-flop and latch?
22. Explain the differences between edge triggering and pulse triggering circuits.
23. What are the different types of instruction format?
24. Briefly explain about memory reference instructions.
25. What is the main aim of virtual memory? Explain its concepts with neat diagram.
26. Write an account on Peripheral devices.
27. Discuss different types of interrupts.

**(6 x 4 = 24 Marks)**

**SECTION D: Answer any *three* questions. Each carries *ten* marks.**

28. What is full adder with truth table? How do you construct a full adder by using two half adders?
29. Explain Master-Slave Flip-Flop. How does it overcome the race condition of J-K flip-Flop?
30. What is an instruction cycle? Explain the different steps in instruction cycle.
31. Explain different types of addressing modes with illustration.
32. What is DMA? Explain the DMA transfer with a neat diagram.

**(3 x 10 = 30 Marks)**