18U564 (Pages: 2) Name: …………………..

Reg. No…………...…….

FIFTH SEMESTER B.C.A. DEGREE EXAMINATION, NOVEMBER 2020
(CUCBCSS-UG)
(Regular/Supplementary/Improvement)
CC17U BCA5 B08 - COMPUTER ORGANIZATION AND ARCHITECTURE
(Computer Application - Core Course)
(2017 Admission onwards)

Time: Three Hours   Maximum: 80 Marks

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

1. Why NAND gate is known as universal gate?

2. Draw the truth table for full adder.

3. Differentiate between edge triggering and pulse triggering flip flops.

4. What is the maximum possible range of bit-count specifically in n-bit binary counter consisting of 'n' number of flip-flops?

5. Define instruction cycle of a computer.

6. What is the role of PC register in the execution of an instruction?

7. Define microprogram.

8. Give an example of zero address instruction.

9. What do you mean by hit/miss ratio?

10. What is the function of I/O interface?

(10 x 1 = 10 Marks)

PART B
Answer all questions. Each question carries 2 marks.

11. Draw the logic diagram for half adder.

12. Explain the advantages of look ahead carry adders.

13. Explain the difference between direct addressing and indirect addressing.

14. Describe the use of D flip flop.

15. What are the different steps for address sequencing in microprogrammed control unit?

16. Explain the memory hierarchy in a computer system.

17. State the principle of locality of reference.

18. Distinguish between internal and external interrupts with examples.

(8 x 2 = 16 Marks)

PART C
Answer any *six* questions. Each question carries 4 marks.

19. What is a decoder? Explain the function of 3 x 8 decoder.

20. Describe various types of flip flops in detail.

21. Explain the working of Ring counter with an example.

22. Explain the function of AR, IR, DR and AC registers.

23. Draw the flowchart for interrupt cycle.

24. Explain stack organization in detail.

25. Which are the four different types of status bits using in program control? Explain.

26. Explain the working of associative memory.

27. Explain priority interrupts in detail.

(6 x 4 = 24 Marks)

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

28. What are the applications of BCD to 7 – segment decoder? Explain its working in detail.

29. Explain different types of addressing modes in detail with suitable examples.

30. Explain various steps in the instruction cycle of a computer with a neat diagram.

31. What do you mean by memory mapping? Explain different memory mapping techniques in detail.

32. Explain different modes of data transfer between computer and I/O devices.

(3 x 10 = 30 Marks)

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