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(FOR THE CANDIDATES ADMITTED DURING THE ACADEMIC YEAR 2022 ONLY)

22UIT102

REG.NO

NGM COLLEGE (AUTONOMOUS) POLLACHI

END-OF-SEMESTER EXAMINATIONS: DECEMBER- 2022

B. Sc –Information Technology **MAXIMUM MARKS: 50**

I SEMESTER **TIME: 3 HOURS**

PART - III

COMPUTER SYSTEM ARCHITECTURE

SECTION – A (10 X 1 = 10 MARKS)

ANSWER THE FOLLOWING QUESTIONS. (K1)

1. Demargan's Theorem in Boolean Algebra is dealing with _____
   a) NOR & NAND b) OR & NAND
   c) NOR & AND d) OR & AND

2. Computers that have a single-processor register called _____ and label it AC.
   a) Program Counter b) Accumulator c) Switch d)Register.

3. A _____ is a storage device that stores information in such a manner that the item stored last is the first item retrieved (LIFO)
   a) File b) Register c) Stack d) Queue.

4. _____ is a feature of computer systems that allow certain hardware subsystems to access main system memory independently of the central processing unit.
   a) Direct Memory Access(DMA) b) Direct Access (DC)
   c) Strobe d) Stack

5. A memory unit accessed by data content rather than by specific address or location is called an _____ or Content Addressable Memory (CAM).
   a) Auxiliary Memory b) Cache Memory
   c) Main Memory d) Associative Memory

ANSWER THE FOLLOWING IN ONE (OR) TWO SENTENCES (K2)

6. Draw the Logic Diagram and Truth Table for OR gate
7. What is the use of Program Counter (PC)?
8. Define ALU.
9. What did you mean by Peripheral Devices?
10. Define Cache Memory.

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SECTION – B (5 X 3 = 15 MARKS)

ANSWER EITHER (a) OR (b) IN EACH OF THE FOLLOWING QUESTIONS.

(Qn. No. 11 to 15 Questions for Short Answers with internal choices) (K3)

11. a) Convert the following Decimal Numbers to Binary Numbers.
    I. 127_{10} II. 64_{10}

    (OR)

    b) Write in detail about Complement numbers.

12. a) Explain the phases of Instruction Cycle.

    (OR)

    b) Describe the Memory Reference Instructions.

13. a) Briefly explain the Program Control instructions.

    (OR)

    b) Explain the common fields of Instruction Formats.

14. a) Describe the functions of Peripheral Devices.

    (OR)

    b) Explain in detail the DMA Controller?

15. a) What is Memory Hierarchy? Explain.

    (OR)

    b) Explain the need of Auxiliary Memory

SECTION – C (5 X 5 = 25 MARKS)

ANSWER EITHER (a) OR (b) IN EACH OF THE FOLLOWING QUESTIONS.

(Qn. No. 16 to 20 Questions for Long Answers with internal choices) (K4 (Or) K5)

16. a) Summarise the various types of Logic Gates.

    (OR)

    b) Discuss the various types of Map Method.

17. a) Explain in details the Instruction Codes.

    (OR)

    b) Discuss the Input -Output and Interrupts.

18. a) Outline the three categories of Data Transfer and Manipulation.

    (OR)

    b) Discuss the features of Stack Organization.

19. a) Outline the Asynchronous Data Transfer.

    (OR)

    b) Explain Input – Output Interface.

20. a) Outline the organization of Cache Memory.

    (OR)

    b) Discuss the function of Main Memory.