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(FOR THE CANDIDATES ADMITTED DURING THE ACADEMIC YEAR 2023-24 ONLY)

SUBJECT CODE 23 PPS 4E7

REG.NO.

N.G.M.COLLEGE (AUTONOMOUS) : POLLACHI

END-OF-SEMESTER EXAMINATIONS : MAY– 2025

M.Sc. – PHYSICS **MAXIMUM MARKS: 75**

IV SEMESTER **TIME : 3 HOURS**

MICROPROCESSOR & OBJECT ORIENTED PROGRAMMING WITH C++

SECTION – A (10 X 1 = 10 MARKS)

ANSWER THE FOLLOWING QUESTIONS. (K1)

1. The ALU (Arithmetic Logic Unit) of 8085 performs…….
   (a) Only arithmetic operations (b) Only logical operations
   (c) Both arithmetic and logical operations (d) None of the above
2. Which instruction is commonly used in looping programs?
   (a) JMP (b) CALL (c) RET (d) PUSH
3. Which of the following is not a feature of Object-Oriented Programming?
   (a) Encapsulation (b) Polymorphism (c) Recursion (d) Inheritance
4. ------ operators is used for unary operator overloading.
   (a) + (b) - (c) ++ (d) All of the above
5. In multiple inheritance, a derived class inherits from how many base classes?
   (a) One b) Two or more c) Exactly two d) None

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

6. What is the function of the Program Counter (PC) in 8085?
7. What is the bit size of the Intel 8048 microcontroller?
8. Define Polymorphism in OOP.
9. Name an operator that cannot be overloaded.
10. Define Hierarchical inheritance.

SECTION – B (5 X 5 = 25 MARKS)

ANSWER EITHER (a) OR (b) IN EACH OF THE FOLLOWING QUESTIONS. (K3)

11. a) Explain the differences between Arithmetic and Logical Instructions in the 8085 microprocessor.

(OR)

b) What are the different addressing modes in the 8085 microprocessor? Explain each with an example.

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12. a) Explain the steps involved in microprocessor programming in detail.

(OR)

b) Explain the block diagram of the 8051 microcontroller with its components.

13. a) Explain the benefits of Object-Oriented Programming.

(OR)

b) Explain arrays within a class with an example program.

14. a) Explain constructors and their purpose in C++ with an example.

(OR)

b) List and explain any four rules for operator overloading.

15. a) Explain hybrid inheritance with a suitable diagram and example.

(OR)

b) Explain virtual functions and their significance in C++ with an example.

SECTION – C (5 X 8 = 40 MARKS)

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

(K4 (Or) K5)

16. a) Describe the internal architecture of the 8085 microprocessor with a block diagram and explain the function of each component.

(OR)

b) Write an assembly language program to add two 8-bit Hexadecimal numbers and store the result in
memory.

17. a) Describe in detail the architecture and working of the Intel 8051 microcontroller with a block diagram.

(OR)

b) Write an assembly language program to multiply two 8-bit Hexadecimal numbers in 8085 and explain the steps involved.

18. a) Explain the process of defining a class and its member functions with a C++ example.

(OR)

b) Explain the concept of Objects as Function Arguments with a C++ program.

19. a) Discuss destructors in C++ and explain their importance with an example program.

(OR)

b) Compare constructor overloading and function overloading in C++ with examples.

20. a) Explain virtual base classes with an example and discuss their importance in multiple inheritance.

(OR)

b) Explain pointers to derived classes and their role in dynamic polymorphism with an example.

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