(FOR THE CANDIDATES ADMITTED   SUBJECT CODE [21PPS4E7]

DURING THE ACADEMIC YEAR 2021-22 ONLY)   REG. NO. [   ]

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

END-OF-SEMESTER EXAMINATIONS : MAY – 2023

M.Sc. PHYSICS   **MAXIMUM MARKS: 70**

IV SEMESTER   **TIME : 3 HOURS**

MICROPROCESSOR AND OBJECT-ORIENTED PROGRAMMING WITH C++

SECTION - A   **(10 X 1 = 10 MARKS)**

ANSWER THE FOLLOWING QUESTIONS.
MULTIPLE CHOICE QUESTIONS.   **(K1)**

1. The _____ controls the flow of data and instructions within the computer

   a) control unit   b) register array   c) accumulator   d) ALU

2. How does the microcontroller communicate with the external peripherals / memory?

   a) via I/O ports   b) via register arrays   c) via memory   d) all of the above

3. Which of the following features must be supported by any programming language to become a pure object-oriented programming language?

   a) Encapsulation   b) Inheritance   c) Polymorphism   d) All of the above

4. Which one of the following cannot be used with the virtual keyword?

   a) constructor   b) destructor   c) member function   d) none of the above

5. Which of the following is the correct way to declare a pointer ?

   a) int &ptr   b) int ptr   c) int *ptr   d) All of the above

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

6. Why is the data bus bidirectional?

7. What is a microcontroller?

8. What are objects?

9. What is operator overloading?

10. What are the different forms of inheritance?

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SECTION – B **(5 X 4 = 20 MARKS)**

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

11. a) Explain data transfer instructions with example.

(OR)

b) Explain the 8085 bus structure with a neat diagram.

12. a) What are the steps involved in the microprocessor programming.

(OR)

b) Discuss the architecture of 8048 microcontroller.

13. a) Discuss the benefits of OOP.

(OR)

b) Explain the static data members.

14. a) List some of the special properties of the constructor function.

(OR)

b) Describe the importance of destructors.

15. a) Describe the syntax of single inheritance in C++.

(OR)

b) Explain pointers to objects.

SECTION - C **(4 X 10 = 40 MARKS)**

ANSWER ANY FOUR OUT OF SIX QUESTIONS
(16th QUESTION IS COMPULSORY AND ANSWER ANY THREE QUESTIONS
(FROM Qn. No : 17 to 21) **(K4 (Or) K5)**

16. Describe the 8085 microprocessor architecture and its operations with appropriate block diagram.

17. Explain arithmetic and logical instruction sets with examples.

18. With a neat block diagram explain the working of 8051 microcontroller.

19. What is a friend function? Give the syntax of the function. Illustrate the use of a friend function with an example.

20. Discuss the overloading of unary and binary operators, with sample program.

21. What is inheritance? What are the types of inheritance? Explain multiple inheritance in C++ and its utility in programming.

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