

**IR-1569**

**M. A. / M. Sc. (Third Semester) Examination,  
Dec. 2021**

**MATHEMATICS**

***Paper : First (Optional Group-VI) (I)***

**(Fundamental of Computer Science)**

***Time Allowed : Three hours***

***Maximum Marks : 25***

***Note : Attempt questions of all two sections as directed. Distribution of marks is given with sections.***

**Section-‘A’**

**(Short Answer Type Questions) 5×2=10**

***Note : Attempt all the five questions. One question from each unit is compulsory. Each question carries 02 marks.***

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**PTO**

**| 2 |**

**Unit-I**

1. Explain object in C++ tokens with example.

**Or**

Write any four C++ token with example.

**Unit-II**

2. What do you mean Identifier? Give an example.

**Or**

Differentiate between constant and variable with an example in C++.

**Unit-III**

3. Explain overloading operator and operator precedence with example.

**Or**

Define switch statement and do-while statement.

**Unit-IV**

4. Explain the need for prototype function in C++.

**Or**

Define the main function and inline function with an example.

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**Unit-V**

5. Explain two class of specification and give the general form of a class declaration.

**Or**

Define Array within a class and give an example.

**Section-'B'**

(Long Answer Type Questions) 5×3=15

*Note : Attempt all the five questions. One question from each unit is compulsory. Each question carries 03 marks.*

**Unit-I**

6. What is Object Oriented Programming? How is it different from the procedural oriented programming?

**Or**

What are the different forms of inheritance? Give an example at each.

**Unit-II**

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7. Explain Basic Data types and user defined data types and also define their merits and demerits.

**Or**

What are the applications of void data types in C++?

**Unit-III**

8. Write a program in C++ to print the following output using loop :

```

1
2 2
3 3 3
4 4 4 4
5 5 5 5 5

```

**Or**

Write a programs to explain the use of the switch statement and do....while statement.

**Unit-IV**

9. What is the main function and call by reference? Why do we need call by reference with suitable program?

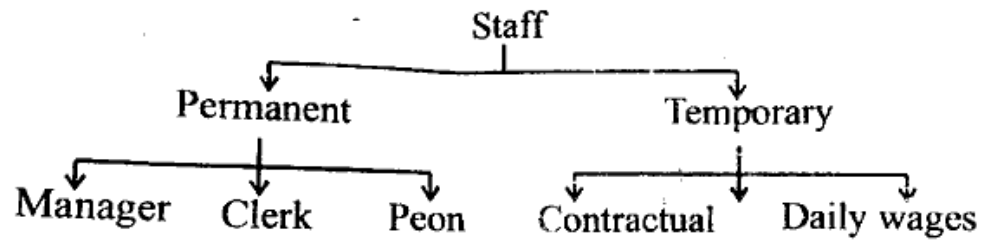
**Or**

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What do you mean by function overloading and write a suitable program for same.

**Unit-V**

10. Construct a base class and its derived classes with their characteristics for the following class hierarchy :



**Or**

Explain static data members and static members functions and differentiate between them with suitable program.

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