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Roll No.

PAPER ID—14901

**Master of Computer Applications-2
EXAMINATION, 2023**

(First Semester)

**OBJECT ORIENTED PROGRAMMING
USING C++**

Time : 3 Hours

Maximum Marks : 80

Before answering the question-paper candidates should ensure that they have been supplied to correct and complete question-paper. No complaint, in this regard, will be entertained after the examination.

Note : Attempt *Five* questions in all, selecting *one* question from each Unit. Q. No. 1 is compulsory. All questions carry equal marks.

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1. (a) What does polymorphism mean in C++ language ? 2
- (b) What is new keyword ? 2
- (c) Define derived Classes. 2
- (d) Write uses of templates in C++. 2
- (e) Explain prototypes in C++ 2
- (f) Explain static members. 2
- (g) What are Iostreams ? 2
- (h) Discuss the benefits and applications of OOPs. 2

Unit I

2. (a) Discuss uses and advantages of encapsulation in C++ with examples. 8
- (b) Discuss the benefits and application of OOPs. 8
3. (a) What is recursion ? Explain with example. 8
- (b) Explain Flow control and user defined data types in C++. 8

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Unit II

4. (a) What is a constructor ? Describe the type of constructor each with an example. 8
- (b) Explain use and advantages of virtual functions in detail with C++ codes. 8

5. Describe the following :

- (a) Use of object slicing in C++ 8
- (b) What is virtual function ? 8

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Unit III

6. (a) Define memory management. How is it used and useful ? 8
- (b) What is function overloading ? Explain with example. 8
7. (a) Explain 'Operator overloading' Discuss its rules. 8
- (b) Prototypes and its advantages in C++. 8

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Unit IV

8. Define template function. How are these used and useful ? Discuss with examples and with C++ codes. 16
9. How does file pointer work in C++ ? What are various manipulators ? Explain updating, random access and errors handling during file operations with example. 16