Total No. of Pages: 02

Total No. of Questions: 09

# Master of Science (Computer Science) (Sem. - 1) OOPS USING C++ & JAVA

**Subject Code: MSC-102** 

M Code: 70888

Date of Examination: 21-01-23

Time: 3 Hrs. Max. Marks: 60

### **INSTRUCTIONS TO CANDIDATES:**

- SECTIONS-A, B, C & D contains TWO questions each carrying TEN marks and students have to attempt any ONE question from each SECTION.
- SECTION-E is COMPULSORY consisting of TEN questions carrying TWENTY marks in

### **SECTION-A**

- 1. What are the benefits of object-oriented programming over procedure-oriented programming language? Give a suitable real-world example to demonstrate the difference.
- 2. What is polymorphism? How do you think it is suitable for object-oriented programming? Write a program to implement overloading and overriding in C++.

## SECTION-B

- 3. What is object modelling? How do object model, dynamic model and functional model differ from each other?
- 4. What are the phases in object-oriented software development and what are its benefit?

#### **SECTION-C**

- 5. What do you understand by classes and objects in object-oriented programming? Write a program in C++ to demonstrate various kind of inheritance in C++.
- 6. What is the role of constructor and destructor in object-oriented programming? Write a program to demonstrate the concept of copy constructor in C++.

### **SECTION-D**

7. Java is platform independent. Justify the statement. What are differences in C++ and Java? Write a program of your choice in both C++ and Java to demonstrate at least 5 differences in Java and C++.

M-70888 S-2815 8. What is string in Java? What do you understand by immutable class in Java? Write a Java program to find the frequency of each character in a string and return the character with highest frequency.

### **SECTION-E**

- 9. Answer the questions in brief:
  - a) Differentiate between early binding and late binding in C++.
  - b) What is data hiding in object-oriented programming?
  - c) What do you understand by derived data type in C++?
  - d) What are structures in C++? Explain with example in C++.
  - e) What is a virtual function C++? Explain with example.
  - f) What is inheritance? Explain with example.
  - g) What is the difference between structure and object in C++
  - Differentiate between interface and abstract class in Java.
  - i) What is JDK?
  - What is multithreading in Jews?

NOTE: Disclosure of Identity by writing Mobile No. or Marking of passing request on any paper of Answer Sheet will lead to UMC against the Student.

M-70888 S-2815