Roll No. ☐☐☐☐☐☐☐☐☐☐☐☐ Total No. of Pages : 02

Total No. of Questions : 18

M.Sc. (Computer Science) (2016 & Onwards)   (Sem.–1)
OOPS USING C++ & JAVA
Subject Code : MSC-102
M.Code : 70888

Time : 3 Hrs.   Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

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

SECTION-A

Q1 What is the difference between procedure-oriented programming language and object-oriented programming language? Give a suitable real-world example to demonstrate the difference.

Q2 What are classes and objects in object-oriented programming? Write a program in C++ to demonstrate the concept of operator overloading using friend function in C++.

SECTION-B

Q3 What is Object Modelling? How do object model, dynamic model and functional model differ from each other?

Q4 What are the phases in object-oriented software development and what are its benefit?

SECTION-C

Q5 What is the role of constructor and destructor in object-oriented programming? Write a program to demonstrate the concept of copy constructor in C++.

Q6 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-D

Q7 How Java is platform independent? 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++.

Q8 Strings are immutable in Java. Explain the statement with, the help of a program. Write a Java program to find the frequency of each character in a string and return the character with highest frequency.

SECTION-E

Please answer the questions given below in brief.

Q9 What is dynamic binding?

Q10 What is data abstraction?

Q11 What do you understand by data type in C++?

Q12 What are arrays in C++? Explain with example in C++.

Q13 What are functions in C++? Explain with example.

Q14 What is inheritance? Explain with example.

Q15 What is the difference between abstract class and interface in Java?

Q16 Differentiate between structure and class in C++.

Q17 What is multi-threading in Java?

Q18 What is JVM?