

**POST GRADUATE DIPLOMA IN COMPUTER  
APPLICATIONS (NEW)  
(PGDCA (NEW))**

**Term-End Examination**

**June, 2022**

**MCS-206 : OBJECT ORIENTED PROGRAMMING  
USING JAVA**

*Time : 3 hours*

*Maximum Marks : 100*

*(Weightage : 70%)*

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**Note :** *Question no. 1 is compulsory and carries 40 marks. Answer any **three** questions from the rest.*

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1. (a) What are access specifiers ? Explain the difference between public and private access specifiers in Java, with the help of an example. 6
- (b) Write a Java program which takes a string as input and displays its length. 5
- (c) Write a Java program to find the sum of two matrices of dimension  $3 \times 3$ . 5

- (d) What is a package in Java ? Explain accessibility rules for packages. 7
- (e) Explain the use of Map class in Java, with the help of a program. 5
- (f) What is object serialization ? Explain the working and use of object serialization. 6
- (g) Explain event handling in JavaFX, with the help of a program. 6
- 2.** (a) What is inheritance ? Explain the advantages of inheritance. Explain order of calling of constructors in the case of multilevel inheritance, with the help of a program. 10
- (b) Write a program using JDBC to store student information which includes name, roll number, date of birth and programme code. Give suitable comments in your program. 10
- 3.** (a) What is multithreading ? Explain how thread synchronization is achieved in Java, with the help of a program. 10
- (b) What is polymorphism ? Explain the different types of polymorphism that are supported by Java, with the help of examples. 10

4. (a) Explain how Java provides platform independence, with the help of a diagram. 5
- (b) Explain the use of “final” and “super” keywords of Java. 5
- (c) What is exception ? Explain basic causes of exception. Write a program to explain how to handle “ArrayIndexOutOfBoundsException” in Java. Also explain the use of “finally” clause in exception handling. 10
5. (a) What is encapsulation ? How is it implemented in Java ? Explain through a program. 5
- (b) Explain the use of getter methods and setter methods in Java programming, with the help of an example. 5
- (c) Explain the difference between abstract class and interface. 5
- (d) Explain the use of “ByteStream” class in Java. 5
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