

BACHELOR OF COMPUTER APPLICATIONS (BCA_NEWOL)

BCA_NEWOL /ASSIGN/SEMESTER-IV

ASSIGNMENTS

(January - 2026 & July - 2026)

MCS-206, BCSL-146, BCS-053, BCSL-147, BCS-041, BCOC-131,



SCHOOL OF COMPUTER AND INFORMATION SCIENCES

**INDIRA GANDHI NATIONAL OPEN UNIVERSITY
MAIDAN GARHI, NEW DELHI – 110 068**

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Important Notes

1. Submit your assignments through the Learning Management System (LMS) on or before the due date.
2. Assignment submission before due dates is compulsory to become eligible for appearing in corresponding Term End Examinations. For further details, please refer to BCA_NEWOL Programme Guide.
3. To become eligible for appearing the Term End Practical Examination for the lab courses, it is essential to fulfill the minimum attendance requirements as well as submission of assignments (on or before the due date). For further details, please refer to the BCA_NEWOL Programme Guide.

Course Code	:	MCS-206
Course Title	:	Object Oriented Programming Using Java
Assignment Number	:	BCA_NEWOL(IV)/206/Assignment/2026
Maximum Marks	:	100
Weightage	:	30%
Last Dates for Submission	:	30th April, 2026 (for January session) 31st October, 2026 (for July session)

Note: This assignment has eight questions of 80 Marks. Answer all the questions. Rest 20 marks are for viva voce. You may use illustrations and diagrams to enhance the explanations. Please go through the guidelines regarding assignments given in the Programme Guide for the format of presentation.

Question 1:

- (a) Explain different operators available in java. **(5 Marks)**
- (b) What is object-oriented programming? What are its advantages? Explain Java is platform independent. **(5 Marks)**

Question 2:

- (a) What is a class? How a class is different from object? Explain need of private access specifiers in java with example program. **(4 Marks)**
- (b) Explain use of abstract class in Java programming. What is abstract method? Explain with example. **(4 Marks)**
- (c) What is String class? Explain use of any four methods of String class. **(2 Marks)**

Question 3:

- (a) Write a java program to find simple interest and compound interest. Define proper class and methods in your program. **(4 Marks)**
- (b) Explain use of InputSteam and OutputStream classes with the help of examples. **(6 Marks)**

Question 4:

- (a) What is inheritance? What are advantages of it? Explain how multilevel inheritance is implemented in java with the help of an example. **(7 Marks)**
- (b) Explain use of interface in Java with example program. **(3 Marks)**

Question 5:

- (a) What is polymorphism? What are different types of polymorphism supported by Java? Explain in detail. **(5 Marks)**
- (b) What is an exception? Explain various causes of exceptions. How exceptions are handled in java? Explain concept of exception hierarchy. **(5 Marks)**

Question 6:

- (a) What is multithreading? How threads are created in Java? Write a java program to demonstrate advantage of multithreading. **(5 Marks)**
- (b) Explain use of Mapinterface inJava. **(2 Marks)**
- (c) Explain Autoboxing and Unboxing with example. **(3 Marks)**

Question 7:

- (a) Explain Swing package/class hierarchy. What are different Swing components? **(4 Marks)**
- (b) What is FXML? Explain features of JavaFX. Also, explain differ layouts used in Java GUI development. **(6 Marks)**

Question 8:

- (a) Write a Java program using JDBC to manage issue and return of Books in a Library. Make Necessary assumptions. Make provisions of exception handling in your program. **(8 Marks)**
- (b) Explain different types of JDBC drivers. **(2 Marks)**