

Mid-West University
Examinations Management Office

Final Examinations -2081

Level: Bachelors/ BIT /Semester: II

F. M: 60

Time: 3hrs.

P. M: 30

Subject: Object Oriented Programming I (BIT426)

Candidates are required to give their answers in their own words as far as practicable. Figures in the margins indicate marks.

Group A

Very short questions (Attempt ALL)

[8 x 2 = 16]

1. Differentiate between structured programming and object-oriented programming.
2. What do you mean by data types? Illustrates its importance.
3. Explain conditional operator.
4. What are the modes of inheritance?
5. Explain default arguments with example.
6. Define exception and exception handling.
7. Draw the diagram of I/O stream classes.
8. Define inline function.

Group B

Short answer questions (Attempt ANY FIVE) [5 x 4 = 20]

9. Define a class Student with fields name and grade. Implement a method setData(String name, double grade) to initialize these fields and a method isPassing() that returns true if the grade is 50 or above and false

otherwise. Write a main method to create a student object, set its data, and check if the student is passing.

10. Write a C++ program to store book records in a file named "book_records.txt" and write the Book ID, Title, Author, Genre, and Price. The program should prompt the user to enter this information for five books and store the records in the file.
11. Write a program to illustrate function overloading.
12. Write programs to demonstrate the concept of exception handling.
13. Write a program to display all the prime numbers from 1 to 1000.
14. Explain different types of constructors in C++.

Group C

Long answer questions (Attempt ANY THREE) [3 x 8 = 24]

15. Describe the four core principles of Object-Oriented Programming (OOP). Create a class Time with members hours, minutes, and seconds, and constructors to initialize them. Define member functions showData() to display time and add_time() that takes two Time objects as parameters, adds their hours, minutes and seconds, and returns the sum as a new Time object by value.
16. Write a program with a base class Shape having a member function area(). Derive two classes: Circle (with a member radius) and Rectangle (with members length and width). Implement the area() function in both derived classes to calculate the area of the circle and rectangle. In the main() function, create objects for both Circle and Rectangle, input necessary values, and display their areas.

17. Discuss operator overloading. Write a program to overload binary < operator to compare two Room objects. Assume that Room class has length, breadth and height as fields and use volume to compare two rooms.
18. What are the different kinds of type conversions in C++? Explain primitive to class type conversion with suitable example.

The End