BINDURA UNIVERSITY OF SCIENCE EDUCATION

FACULTY OF SCIENCE EDUCATION

EDUCATIONAL TECHNOLOGY DEPARTMENT

BACHELOR OF SCIENCE EDUCATION IN COMPUTER SCIENCE

CS112/EDT115 OBJECT-ORIENTED PROGRAMMING 1 B

DURATION 3 HOURS TOTAL MARKS IS 100

AUG 2024

INSTRUCTIONS TO CANDIDATES

Answer all **QUESTIONS**

QUESTION 1

a) Explain the difference between Object-Oriented Programming and Structured Programming? **[4]**

b) List and explain **five** benefits of Object-Oriented Programming. **[10]**

c) What is encapsulation in object-oriented programming and how does it help in modularity? **[6]**

QUESTION 2

a) Explain any **three** of the following C++ tokens, giving **two** examples on each:

keywords, identifiers, constants, strings, operators, and punctuators. **[12]**

b) What is the difference between a class and a struct in C++? Provide an example to illustrate your answer. **[8]**

QUESTION 3

a) Write a C++ program that creates a Book class to represent a book with a title, author, date published, ISBN, location, issued status, returned status, borrower name, and date due, and a Library class to represent a library with a list of books. The program should add books to the library, issues and deposits books, and lists the books with their details. **[20]**

QUESTION 4

a) Write a program to demonstrate the use of pointers to swap two integer numbers. **[8]**

b) With the aid of an example write a statement fundamental to decision-making in C++ programming used to control the flow of the program based on specific conditions. **[4]**

c) Write a program to find the largest of three numbers, num1, num2 and num3 entered by a user. **[8]**

QUESTION 5

a) Write a program that demonstrates how to pass an array with **(five)**5 elements to a function and find the **sum** of its elements. **[10]**

b) Write a C++ program to check if a number is prime using a function. **[10]**

*******END OF EXAMINATION******