

Eastern University, Off
0-1

Eastern University of Sri Lanka
First Examination in Science – 2002/2003
CS 103 – Introduction to program
Design and Programming
First Semester (Proper/Repeat)

Time: 2 hours

Answer All Questions

Q1)

- a) Describe the standard input /output statements in C++ language.
- b) Write a program to read the length and breadth of a rectangle and output the area and perimeter.
- c) A series of positive numbers are to be entered from the keyboard with the end of the sequence is identified by a negative number. Write a C++ program to output the sum of the numbers entered.
- d) Extend the program in part(c) so that it also counts the number of numbers entered.

Q2)

- a) Clearly describe the syntax of the following loop constructs in C++ language
 - i. **For**loop
 - ii. **While**.....loop
- b) Write a program to read a set of numbers and count the number of negative and the number of positive values read. Your program should output the results
- c) Write a program which will print a table of ascending powers of two. Terminate printing when the value of the power of two exceeds 10000.

Output should be as follows:

1	2^{0^1}
2	2^{1^1}
4	2^2
.	.
.	.

Q3)

- a) Explain the concept of **arrays** in Computer languages.
- b) Describe creating and using Dynamic arrays.
- c) Write a C++ function, with size of the array as one parameter and array name as another parameter, to read and store a set of numbers in a dynamic array.
- d) Write another function to sort the array created in (c)
- e) Write a main program to test your functions in (c) and (d),

Q4)

- a) Describe the **struct** data type in C++
- b) Define a record structure with the following fields:
 - Employee Name
 - Employee Number
 - Age
 - Sex
 - Department Number
 - Basic Salary
- c) Declare an array of records with 10 employee's
- d) Write two functions, **input-employee** and **display-employee** to read and display employee's details respectively
- e) Write a main program to test your declarations and functions