December,2023

B.Sc.(H) Physics 1st SEMESTER

Computational Skills with C++ (SECP23-101T)

Time: 3 Hours

Max. Marks:75

Instructions:
1. It is compulsory to answer all the questions (1.5 marks each) of Part -A in short.
2. Answer any four questions from Part -B in detail.
3. Different sub-parts of a question are to be attempted adjacent to each other.

PART -A

Q1 (a) What is inline function? (1.5)

(b) What is function prototype? (1.5)

(c) What are jump statements? (1.5)

(d) What happens if the break statement in the switch case selection statement is not used? (1.5)

(e) Explain the errors encountered in any programming language? (1.5)

(f) Convert the following: $(326.56)_8 = (\ ? \ )_{16}$. (1.5)

(g) What are data types and variable names? Name different data types recognized by C++. (1.5)

(h) What are functions of cin and cout statement? (1.5)

(i) What are escape sequences? (1.5)

(j) Find the possible solution of $(123)_5 = (x8)_y$. (1.5)

PART -B

Q2 (a) Explain all types of loops available in C++ with their syntax. Write a program to generate table of a number "n" being entered by user. (8)

(b) How Algorithm is different from flowchart? Prepare a flowchart to find whether a given integer is positive or negative. (7)

Q3 (a) How is the "switch case selection statement" different from "if else conditional statement" ? Explain with example. (8)

(b) What do you mean by preprocessor directive and header files and how they work? Explain with example. (7)

Q4 (a) Explain the explicit normalized floating point representation as adopted in IEE-754. How they differ in single precision and double precision? (5)

(b) Determine the floating point representation of (i) $(5.875)_{10}$ and (ii) $(0.00011010011)_2$ (5)

(c) Explain Unary, Binary and Ternary operator with suitable example. (5)

Q5 (a) What is a function? What is the difference between Call by Value and Call by Reference method of calling a function? Explain with proper examples. (8)

321105/60/111/-28

(b) What do you mean by scope of variables? Define local variable and global variable with the help of an appropriate example. (7)

Q6 (a) Define array. Write a program to find the sum of two matrices A and B in third matrix C. (8)

(b) Write a program to find largest of five numbers using array. (7)

Q7 Write short note on following: (15)

(i) Exit and Entry controlled loop

(ii) Low level language and high level language.

(iii) Compiler and interpreter

****