

Q.1 A) Select the most appropriate option and rewrite the following statements. (4)

- 1) Method which uses a list of well-defined instructions to solve a particular problem is known as _____
a) Flowchart b) Program c) Algorithm d) None of these
- 2) Which symbol is used for input and output operation in flowchart?
a) Rhombus b) Parallelogram c) Square d) Rectangle
- 3) Which of the following is an insertion Operator in C++?
a) >> b) << c) > d) <
- 4) Which of the following is used to terminate a C++ statement ?
a) ; b) (c) [d) }

B) Attempt any 2 of the following. (6)

- 1) Assume the declarations: int a=8, b=3, c=-5, d, e, r; What will be the value of:
a) variables d and e after the execution of the following statements (2)
 d = (a*c) % b;
 e = a*(c% b);
b) variable r after the execution of the following statement (1)
 r = 2* b + 3* (a - c);
- 2) Write an algorithm to read Principle amount(p), Rate of interest (r) and Time period (n) from the user. The algorithm must find and print with a suitable message the Simple Interest
 [Note: si=prn/100]
- 3) Explain the difference between / and % operator used in C++.

Q.2 A) Attempt any TWO of the following. (6)

- 1) State whether the following statements are true or false
a) = is an assignment operator in C++.
b) [] can be used in C++ arithmetic statement.
c) Operators and Operand both are different.
- 2) Identify the errors in the following codes, and write the correct form.
#include<iostream.h>
#include<conio.h>
Void main()
{
 float a=1.2, b;
 2.2 = b
 Cout<<a;
}
- 3) Explain Program structure in C++.

B) Attempt any ONE of the following. (4)

- 1) Write the characteristics of an Algorithm.
- 2) Explain declaration and initialization of a variable with example.

Q.3 A) Attempt any TWO of the following.**(6)**

- 1) Define the following:
 - a) Binary Operator
 - b) Compiler
 - c) Flowchart
- 2) Write a C++ statement for the following:
 - a) $c = (a + b)^2$
 - b) $a = 1/2 (b1 + b2)h$
 - c) $V = 4/3 \pi r^3$
- 3) What is Operator Precedence in C++? Explain the concept with an Example.

B) Attempt any ONE of the following.**(4)**

- 1) Write the rules for naming of variable in C++.
- 2) Draw a Flowchart to read the radius of a circle from the user. The flowchart must calculate and print area and circumference of the circle.

Q.4 A) Attempt any TWO of the following.**(6)**

- 1) Mention any two header files used in C++ along with its significance
- 2) Explain the Pre and Post increment operator with an Example.
- 3) Write an algorithm to read an integer from the user. Calculate and print sum of square and cube of the given integer.

B) Attempt any ONE of the following.**(4)**

- 1) What are the basic data types used in C++ ? Explain each with an example.
- 2) Mention all symbols used in flowchart and write the purpose to use.

Q.5 Attempt any TWO of the following.**(10)**

- 1) Write a program in C++ to read a three digit number from the user. The program must calculate and print the sum of all digits present in that number.
 - 2) Write a program in C++ to read two integer values from the user and store it in variables say 'a' and 'b'. The program must swap the values stored in these variables. The program must also print values before and after swapping with a suitable message.
 - 3) Write a program in C++ to read marks of a student in 3 subjects. The program must find and print the total marks and percentage of a student in 3 subjects.
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