XIth Std. Question Bank Paper-1 -2023-24

Theory on Algorithm/Flowchart:

Q1. What is an algorithm and Flowchart?

Q2. Mention all symbols used in flowchart and write the purpose to use

Q3. Write the characteristics of Algorithm and Flowchart.

Q4. What is input statement in an algorithm?

Q5. What is output statement in an algorithm?

Q6. What SYMBOL we use for the input, in flowchart?

Q7. What SYMBOL we use for the output, in flowchart?

Theory on C++:

Q1: Explain Program structure in C++.

Q2. Explain the insertion and extraction operator used in C++.Q3. What is

char set in C++? Explain with Example.

Q4. Explain declaration and initialization of a variable with example.Q5. Write the

rules for naming of variable.

Q6. What is keyword? Write any 4 valid keyword used in C++.Q7. What is

constant? Explain with Example.

Q8.Define the following:

     a) Operand   b) Variable   c) Binary Operator

     b) d) Tokens   e) Compiler f) escape sequence

Q9. What are the basic data types used in C++? Explain each with example.Q10. What is an

operator? Explain Arithmetic operators used in C++.

Q12. What is Unary operator? Explain pre and post increment operatorwith an Example

Q13. Mention any two header files used in C++ along with its significance?Q14. Explain

 Assignment operator used in C++ with an example.

Q15. Explain the difference between / and % operator used in C++.

 Q16. What is Operator Precedence? Explain the concept with an Example.Q17. Define:

Operator Associativity. Explain it with an example.

Q18. Write a single cout statement for the following output statements:cout<<"\n area = ";

cout<<a;

cout<<"\n circumference = ";

cout<<c;

Q19. Explain any two escape sequences.

Q20. Write a C++ statement for the following:

     a) $d= b^2-4ac$

b) p=2(l+w)

c) a=1/2(b1+b2)h

d) $d=a^2+2ab+b^2$

e) $e=b^2-4ac/2a$

f) $c=(a+b)^2$

g) $v = \frac{4}{3}\pi r^3$

Write Algorithm/Flowchart for the following :

1) Write Algorithm/Flowchart to read three values from the user. The algorithm/flowchart must calculate and print the sum and average of these numbers.

2) Write Algorithm/Flowchart to read length and breadth of a rectangle. The algorithm/flowchart must calculate and print the area and perimeter of the rectangle.

3) Write Algorithm/Flowchart to read marks of a student in three subjects. The algorithm/flowchart must calculate and print the total marks and the percentage obtained by the student.

4) Write Algorithm/Flowchart to read two values from the user and store them in variable say 'a' and 'b'.. The algorithm/flowchart must swap/interchange the values stored in these variables. The algorithm/flowchart must print the values before swapping and after swapping.

5) Write an algorithm/flowchart to convert temperature in Fahrenheit to Celsius

6) Write an algorithm/flowchart to Enter three digit-based number and print sum of all digits present in that number

7) Write an algorithm/flowchart to Find the simple interest si=prn/100

8) Write an algorithm/flowchart to read radius of a circle from the user. Calculate and print area and circumference of the circle.

9) Write an algorithm/flowchart to read an integer from the user. Calculate and print sum of square and cube of the given integer.

State whether the following statements are true or false

a) C++ is a not a case sensitive language.

b) % Operator cannot be used on float in C++.

c) Operators and Operand both are different.

d) Int is a keyword.

e) [ ] can be used in C++ arithmetic statement.

f) A Space can be used in a variable name.

g) The statement a=b stores the value of variable b in variable a.

h) = is an assignment operator.

i) – operator can be used to change the sign of a value.

j) / and % operators performs division.

k) % operator performs division and the gives the answer as quotient.

l) A binary operator works on two operands.

m) ++ is a binary operator.

n) A unary operator works on one operand.

Output questions:

Assume the declarations: int a=8, b=3, c=-5, d, e, r;

a) What will be the value of variables d and e after the execution of the followingstatements?

```
d = (a*c)%b;e
= a*(c%b);
```

b) What will be the value of variable r after the execution of the following statement?

```
r = 2*b+3*(a-c);
```

c) Consider the following code and find the value of variable r?int a=5, b =

```
2;
float c=1.0;
r = b / (c * a);
```

d) What will be the value of variables r, m1 and m2, if int a=5,b=6;1) r=++a +

```
b--;
2)  m1=++a * 7;
3)  m2=a++ * 7;
```

e) void main()

```
{
        int x=8;
        cout<<x++;
}
```

f) void main()

```
{
        int b =2, c= 3, d;
        d = b + c – 5 * b % c;
        cout<<d;
}
```

g) Assume int n = 4, a = 1, t = 3, d; what will be the value of d after evaluating thefollowing expression?

```
d = n * a / 2 + 3 / 2 * a + 2 + t;
```

h) Assume int n = 4, a = 1, t = 3, d; what will be the value of d after evaluating thefollowing expression?

```
d = n * a / ((2 + 3) / 2 * a) + 2 + t;
```

i) What will be the output of following code?

```
int n1=50, n2=4, q, r;.
q = n1/n2;
```

```
            r=n1-(q*n2)
            cout<<"The quotient and remainder are : "<<q<<<"  "<r;
```

Identify the errors in the following codes, and write the correct form.

1)
```
#include<iostream.h
#include<conio.h; void
main(
{
clrscr{ };
cout<<"\nhello world";
}
```

2)
```
#include<iostream.h>
#include<conio.h> VOID
main()
{
        Int a;
        cout"\nenter value of a ";
        cin>>a
```

3)
```
#include<iostream.h>
#include<conio.h> Void
main()
{
        float a=1.2, ba +
        2.2 = b
        Cout<<a
}
```

4)
```
void main()
{

        cout"\n enter an integer value ";
        cin>>a
}
```

<u>**Program based on:**</u> **1. Sequence logic based:**

a) Write a Program in C++ to read two integer values from the user and store it in variablesay '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.

b) Write a Program in C++ to read two integer values from the user and store it in variablesay 'a' and 'b'. The program must swap the values stored in these variables without using third variable. The program must also print values before and after swapping with a suitable message..

c) Write a program in C++ to read temperature in Fahrenheit from the user. The programmust convert and print the temperature to Celsius. [Note: F=C *9/5 +32]

d) Write a program in C++ to read a three digit number from the user. The program mustcalculate and print sum of all digits present in that number.

e) Write a program in C++ to read radius of a circle from the user. The program mustcalculate and print area and circumference of circle.

f) Write a program in C++ to read three integer values from the user. The program mustfind and print sum and average of three integer values.

g) Write a program in C++ to read Principle amount(p), Rate of interest (r) and Time period
(n) From the user. The program must find and print with a suitable message the simpleinterest [Note: si=prn/100]

h) Write a program in C++ to read marks of a student in 3 subjects. The program must findand print the total marks and percentage of a student in 3 subjects.

<u>**Select the most appropriate option and rewrite the following statements.**</u>

1. In C++, main() is_____.

    a) Keyword   b) Identifier   c) Function   d) data type

2. To represent Integer value in C++,_____keyword is used.

    a) int   b) float   c)integer   d) None of these

3. To represent real value in C++._____data type is used.

    a) float   b) int   c) long   d) char

4. When an algorithm is written using a programming language, it becomes a_____.

    a) Program   b) Flowchart   c) Syntax   d) All of these

5. In flowchart, Diamond shape box is used for_____.

    a) Decision making b) Specific purpose   c) Process   d) None of these

6. Which of the following is an insertion Operator in C++?

    a) >>   b) <<   c) >   d) <

7. Which of the following rules is invalid to form a variable name?

   a) It always starts with an alphabet   b) it should not be keyword

   c) Space is not allowed   d) Variable names are case sensitive

8. % operator cannot be used with_____data type.

   a) int   b) float   c) char   d) All of these

9. If a=8, b=3, c=-5, r; What will be the value of variable r after the execution ofthe following

   statement?   r = 2*b+3*(a-c);

   a) 45   b) 15   c) Error   d) None of these

10. In flowchart, can we combine Input and Output statement in one statement?

    a) No   b) Yes   c) Depends on program   d) None of these

11. Predefined word is known as _____

    a) Compiler   b)variables   c) Keyword   d) All of these

12. What is this operator >> called as _____

    a) Insertion Operator   b) Extraction Operator

    c) Relational operator   d) increment operator

13. Which of the following is used to terminate a C++ statement?

    a) ;   b) (c)]   d) :

14. char is a data type that can store_byte value.a) 1   b) 2

    c) 4   d) 8

15. In C++ Program structure, first line include..

    a) void main()   b) header file   c) any c++ statement   d) clrscr()

16. Find the proper sequence of the following program. **(3M)**

    1. #include<iostream.h>   2. cin>>a>>b;   3. int a,b,t;

    4. cout<<" Enter the values";   5. t=a; a=b;b=t;   6. void main()

    7. {   8. cout<<" Entered values of :"<<a <<" "<<b; 9.}

    a) 1,6,8,2,3,4,5,7,9   b) 1,6,7,3,4,2,5,8,9

    c) 1, 6, 7,3,2,4,5,8,9   d) None of these

17. Which data type is used to store ALPHABET based value ?

    a) float   b) int   c) char   d) None of these

18. What is Pseudo-Code/programming sequence?

    a) Process, Output   b) Input, Process, Output

    c) Conditional, Process, Output d) None of these

19. Which of the following data type uses 2 bytes in memory to store data?

    a) int   b) long   c) char   d) float

Select the most appropriate option and rewrite the following statements (Algorithm and Flowchart)

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. To Read a value in an algorithm statement used?

    a) Input

    b) Output

    c) Print

    d) None of these

3._____ is a valid statement in Algorithm.

    a) v= u+a*t   b) v=u+at   c) Both a and b   d) None of these

4. Algorithm and Flowchart used for _____.

    a) Better Programming

    b) Easy testing and debugging

    c) Efficient coding

    d) All of the above

5. In an algorithm or flowchart which statement is valid to store value of A in B, If A=5.

    A) B = A

    B) B := A

    C) B A

    D) ALL of these

6. Which of the following steps for the Programming _____.

    a) Understand the problem

    b) Create the logical statement based layout

    c) Write program then debug and run

    d) All of these

7. Which symbol is used for input and output operation in flowchart?

    A) Rhombus

    B) Parallelogram

    C) Square

    D) Rectangle

8. Is it compulsory to end the algorithm?

    a) Yes   b) No

    c) depends on programmer   d) None of these

9. Which of the following is a valid statement to store the value of a+b in c, in algorithm?

     a) a+b = c   b) c = a + b   c) Both a) and b)   d)None of these

10. Which of the following is a valid statement to multiply values of variables c and d, in algorithm?

     a) c * d   b) c x d   c) cd   d) All of these

11. Which of the following is an arithmetic operator in algorithm?

     a) +   b) –   c) =   d) Both a) and b)