Answer any 5 questions from 1 to 6. Each correct answer carries 1 score. **(5 × 1 = 5)**

1. Who introduced the Stored Program Concept in computers ?
   (a) Charles Babbage
   (b) Agusta Ada King
   (c) John Von Neumann
   (d) Alan Turing

2. Identify the stages of programming that are associated with debugging,
   (a) Translation
   (b) Execution
   (c) Both Translation and Execution
   (d) None of these

3. In C++, the tokens which convey specific meaning to the language compiler are known as _____ .

4. What will be the output of the C++ code given below ?

```
for (n=1, s=0; n<5; n+=2)
  s = s + n;
```

5. The first subscript of a C++ array is _____ .

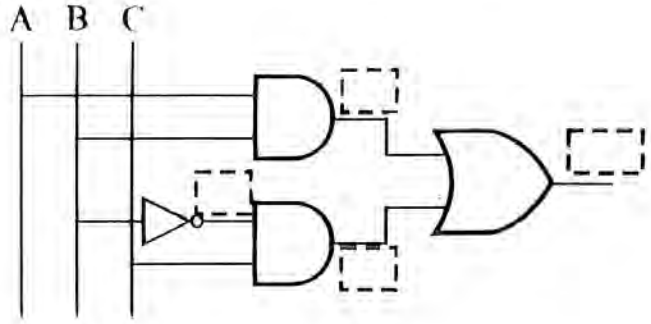
6. Name the built-in function in C++ to input strings having white spaces.

Answer any 9 questions from 7 to 18. Each correct answer carries 2 scores. **(9 × 2 = 18)**

7. Which are known as the universal gates in Boolean algebra ? Why are they called so ?

8. Represent –59 (negative 59) in 2's complement method.

9. Observe the given logic circuit and redraw it by filling up the rectangular boxes with the respective outputs.



10. List out any four functions of Operating System.

11. A flowchart is partially drawn for the following algorithm. Complete it.

Step 1: Start

Step 2: Input N

Step 3: F = 1

Step 4: Repeat Steps 5 to 8 While (F <= N)

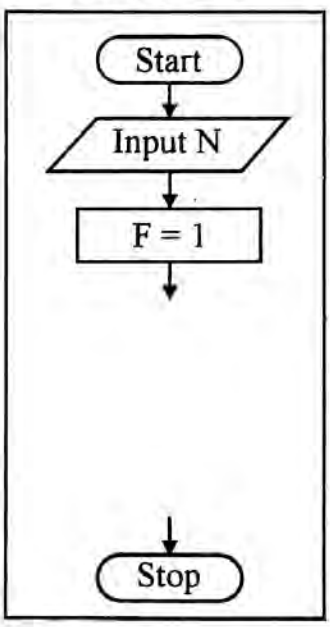
Step 5: If (Remainder of N/F = 0)

Step 6: Print F

Step 7: End of If

Step 8: F = F + 1

Step 9: Stop



12. Write an algorithm to find the sum and average of three numbers.

13. Choose the valid C++ identifiers from the following tokens :

Number	123	2ab	_Val
"NUM"	cin	Num#	Val_1

14. Rewrite the following **for** loop using **do - while** loop.

```
for (n=125, s=0; n>0; n/=10)
    s = s + n%10;
```

15. Distinguish between entry-controlled loop and exit-controlled loop.

16. Consider the C++ array : **int ar[] = {25, 12, 10, 19, 34, 45};**

(a) What will be the size of this array ? Justify your answer. (1

(b) How much memory space will be allocated for this array ? Justify the answer. (1

17. Write a declaration statement in C++ to store the string **"Program"**. How much is the minimum amount of memory to store this string ?

18. What do you mean by 'phishing' and 'spoofing' ?

Answer any 9 questions from 19 to 29. Each correct answer carries 3 scores.

(9 × 3 = 2

19. Give a brief description about the features of the last three generations of computers.

20. Convert the decimal number 97 into the other three number systems.

21. Identify the correct feature from column B and an example from column C for each software in column A.

A	B	C
(a) Word processing software	(i) Calculations of data stored in rows and columns	1. MS PowerPoint
(b) Spreadsheet software	(ii) Slides containing multimedia objects	2. OpenOffice Writer
(c) Presentation software	(iii) Documents containing formatted text	3. MS Excel

22. Explain the three types of errors that may occur in programs.

23. (a) List out any four basic data types of C++.

(b) Declare a variable in C++ and assign 5 as the initial value.

24. Compare **`if - else if`** ladder and **`switch`** statement of C++.

25. How do Linear search and Binary search methods differ in array operation ?

26. List out any three string functions available in C++ and specify the use of each.

27. Observe C++ user-defined function given below :

```
int sum(int a, int b=0, int c=0)
{
        return (a+b+c);
}
```

Explain what happens when each of the following statements is executed :

(a) `cout<<sum(5, 2, 3);`

(b) `cout<<sum(5, 2);`

(c) `cout<<sum(5);`

28. Explain any three advantages of computer networks.

29. Briefly describe any three advantages of social media.

Answer any 2 questions from 30 to 32. Each correct answer carries 5 scores. (2 ×

30. Describe the functional units of a computer with the help of a block diagram.

31. (a) **Identify the errors in the following C++ code segment and give reason for each :**

```
int a=5, b=2, c; float d
a / b = c;
c+++;
d %= 10;
```

(b) **Read the C++ code segment given below and predict the output.**

```
int a=5, b=2, c=3;
cout << a/b << "\t" << a%c << "\n";
cout << (float) a/b;
```

32. (a) **Distinguish between bridge and router.**

(b) **Suppose there are 5 computers in your school office. Prepare short notes on any three possible methods to interconnect these computers. Draw the diagram of each method.**