



Reg. No. : .....

**FY 530**

Name : .....

**FIRST YEAR HIGHER SECONDARY MODEL  
EXAMINATION, FEBRUARY 2025****Part – III  
COMPUTER SCIENCE  
Maximum : 60 Scores**

Time : 2 Hours

Cool-off Time : 15 Minutes

**General Instructions to Candidates :**

- There is a 'Cool off time' of 15 minutes in addition to the writing time.
- Use of 'cool off time' to get familiar with questions and to plan your answers.
- Read questions carefully before answering.
- Read the instructions carefully.
- Calculations, figures and graphs should be shown in the answer sheet itself.
- Malayalam version of the questions is also provided.
- Give equations wherever necessary.
- Electronic devices except non programmable calculators are not allowed in the Examination Hall.

**വിദ്യാർത്ഥികൾക്കുള്ള പൊതുനിർദ്ദേശങ്ങൾ :**

- നിർദ്ദിഷ്ട സമയത്തിന് പുറമെ 15 മിനിട്ട് 'കൂൾ ഓഫ് ടൈം' ഉണ്ടായിരിക്കും.
- 'കൂൾ ഓഫ് ടൈം' ചോദ്യങ്ങൾ പരിചയപ്പെടാനും ഉത്തരങ്ങൾ ആസൂത്രണം ചെയ്യാനും ഉപയോഗിക്കുക.
- ഉത്തരങ്ങൾ എഴുതുന്നതിന് മുമ്പ് ചോദ്യങ്ങൾ ശ്രദ്ധാപൂർവ്വം വായിക്കണം.
- നിർദ്ദേശങ്ങൾ ശ്രദ്ധാപൂർവ്വം വായിക്കണം.
- കണക്ക് കൂട്ടലുകൾ, ചിത്രങ്ങൾ, ഗ്രാഫുകൾ, എന്നിവ ഉത്തരപേപ്പറിൽ തന്നെ ഉണ്ടായിരിക്കണം.
- ചോദ്യങ്ങൾ മലയാളത്തിലും നൽകിയിട്ടുണ്ട്.
- ആവശ്യമുള്ള സ്ഥലത്ത് സമവാക്യങ്ങൾ കൊടുക്കണം.
- പ്രോഗ്രാമുകൾ ചെയ്യാനാകാത്ത കാൽക്കുലേറ്ററുകൾ ഒഴികെയുള്ള ഒരു ഇലക്ട്രോണിക് ഉപകരണവും പരീക്ഷാഹാളിൽ ഉപയോഗിക്കുവാൻ പാടില്ല.



Score

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

1. Name the logic gate that has only one input .
2. Which flowchart symbol has only entry flow ?
3. Mention the C++ arithmetic operator that is allowed to use only with integer data.
4. Choose the correct output of the C++ code given below.

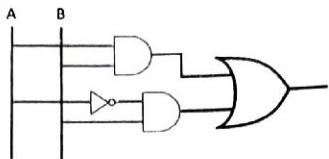
```
int a = 8;  
float b = a%5;  
cout << b/2 ;
```

- a) 1
  - b) 0.5
  - c) 1.5
  - d) 0.4
5. The C++ array : `int num [ ] = {12, 34, 23, 45, 67};` requires \_\_\_\_\_ bytes of memory.
  6. Give an example for Data Terminal Equipment used in computer networks.

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

7. Draw the block diagram of Neumann's architecture of computer.
8. Briefly write down the concept of Turing test.

9. Draw the given logic circuit and mark the outputs of each gate.



10. Distinguish between RAM and ROM.

11. Prepare a short note on debugging.

12. Predict the output of the following algorithm. You can assume any value as input.

Step 1 : Start

Step 2 : Read A, B

Step 3 : Print A, B

Step 4 :  $A = A + B$

Step 5 :  $B = A - B$

Step 6 :  $A = A - B$

Step 7 : Print A, B

Step 8 : Stop

13. Explain the two data type conversions in C++.

14. Compare linear search method and binary search method used in arrays.

15. What is the role of arguments in C++ functions ? List out the two types of arguments.
16. Observe the following user defined function in C++.

```
void fun (int a = 10, b = 5)
{
    return (a + b);
}
```

Identify the errors in this function and give reason for each.

17. Write short note on Bluetooth technology.
18. Prepare a list of hardware and software required for connecting to the Internet.

**Answer any nine questions from 19 to 29. Each correct answer carries 3 score. (9×3=27)**

19. Convert the decimal number 79 into the other three number systems.
20. Prove that Boolean AND operation can be implemented using only NOR gates.
21. Explain the three types of language processors.
22. Draw a flowchart to input a number and find its factorial. (**Hint** : The factorial of 5 is 120 obtained by  $5 \times 4 \times 3 \times 2 \times 1$ ).

23. Observe the following C++ code segment.

```
int a, b;  
cout << "Enter two numbers";  
cin >> a >> b;  
cout << (a+b) / 2.0;
```

Extract different tokens from this code and fill in the proper cells of the table given below. Operators are filled for reference.

Keywords	Literals	Identifiers	Operators
			<< >> + /

24. Read the following C++ code segment.

```
int a = 15, b = 10;  
cout << a++ << '\t';  
b += a;  
cout << b%10 << '\t';  
cout << ++b;
```

Write the output of this code with proper justification.

25. Write a C++ program to input a number and check whether it is odd or even. Use switch statement for the checking.
26. Write an algorithm to sort the numbers in an array in ascending order using bubble sort method.
27. With the help of an example, explain the facilities provided by C++ to input strings containing white spaces.

28. List out any three string manipulation functions in C++ and specify the use of each with the help of examples.
29. Social media plays an important role in human life. Present three arguments each in favour of and against its use.

**Answer any two questions from 30 to 32. Each correct answer carries 5 score. (2×5=10)**

30. Suppose you want to purchase a computer. Prepare a list of hardware and software components that you require and give reason for including each item.
31. Read the following C++ code segment.

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

- a) Explain the execution steps of this code and find the output. (3)
- b) Rewrite the above code using do – while statement. (2)
32. Two pairs of communication devices are given – (i) hub and switch (ii) bridge and router.
- a) Write the common purpose of devices in pair (i). (1)
- b) Write the differences between the devices in pair (ii). (2)
- c) Specify the role of gateway in this context. (2)
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