FIRST YEAR HIGHER SECONDARY SECOND TERMINAL EXAMINATION, DECEMBER 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 എന്നീവ ഉത്തരപേപ്പറിൽ തന്നെ ഉണ്ടായിരിക്കണം.
- ചോദ്യങ്ങൾ മലയാളത്തിലും നൽകിയിട്ടുണ്ട്.
- ആവശ്യമുള്ള സ്ഥലത്ത് സമവാക്യങ്ങൾ കൊടുക്കണം.
- പ്രോഗ്രാമുകൾ ചെയ്യാനാകാത്ത കാൽക്കുലേറ്ററുകൾ ഒഴികെയുള്ള ഒരു ഇലക്ട്രോണിക് ഉപകരണവും പരീക്ഷാഹാളിൽ ഉപയോഗിക്കുവാൻ പാടില്ല.

PART – I

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

1. Jacquard's Loom is considered an early example of programmable machinery because it used a series of _____ to automate complex weaving patterns.

2. The number of symbols used in a number system is called _____

3. Which utility program scans the computer system for viruses and removes them ?

4. The value of p in the following code after execution will be _____

    int p;

    float a=2.5;

    p=a*3;

5. The output of following C++ code segment is _____

    for(n=1; n<5; n++);

    cout<<n;

    a) 1234   b) 12345   c) 4   d) 5

6. Which of the following is invalid for Binary search method ?

    a) Array needs to be sorted

    b) Takes more time

    c) Suitable for large array

    d) All elements are never visited

PART – II

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

7. What is the main difference between analytical engine and difference engine ?

8. Represent - 38 in 2's complement form.

9. Write the dual of the following Boolean expressions.

   a) $X+Y.Z$

   b) $(A.1)+(A+0.\bar{A})$

10. Write any two differences between RAM and ROM.

11. a) Define e-waste.   **(1)**

    b) List any two e-waste disposal methods.   **(1)**

12. Draw the flow chart of looping.

13. Write algorithm to print the numbers from 1 to 100.

14. Find the invalid identifiers from following list and give reason.

- Date_Of_Birth

- _data

- Admn#123

- 25thDec

- Date of Birth

- break

15. Write the basic structure of a C++ program.

16. What is the difference between the jump statements break and continue ?

17. a) Declare an array to store Register number of 5 students. **(1)**

b) How much memory will be allocated to this array ? **(1)**

18. What is the advantage of gets( ) function over extraction operator cin> > ?

PART – III

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

19. Write the key differences between the third and fourth generations of computers in terms of technology used, processing speed and programming languages.

20. a) Which are the universal gates ? **(1½)**

b) Design a circuit that performs the function of an AND gate using only NOR gates. **(1½)**

21. If $(8BF)_{16} = (A)_2 = (B)_8 = (C)_{10}$, find A, B, C.

22. Write short note on the fastest computer memory and its various types.

23. Compare Entry controlled loop and Exit controlled loop.

24. a) What is Debugging ?   **(1)**

b) Write short note on various types of errors that may occur in a program.   **(2)**

25. Explain the Tokens in C++.

26. a) Define statements in C++.   **(1)**

b) List the various statements in C++ with one example for each.   **(2)**

27. If a=3 and b=5 write the output of following operations :

a) a% b

b) a >2 && b>3

c) b*=4

28. Consider the given C++ code segment.

```
for(int i=1; i<=10; i+=2)

cout<<i<<"\n";
```

a) Predict the output.

b) Rewrite the given code segment using the exit controlled loop in C++.

29. Write the algorithm for Bubble sort.

PART – IV

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

30. a) State De Morgan's theorem.   (2)

b) Which are the Boolean operators ?   (1)

c) Construct a logic circuit for the Boolean expression $\bar{a}.b+a.\bar{b}$.   (2)

31. a) Explain the functional units of computer with the help of diagram.   (3)

b) List the functions of operating system.   (2)

32. a) Write C++ program to input A, B and print output as follows using switch statement.

A – Abacus

B - Boolean.   (3)

b) Rewrite the following code segment using ternary operator in C++.

```
if(mark>30)
    result='P';
else
    result='F';
```
     (2)

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