

Tsl11CS

Tenkal District
Common Quarterly Examination - 2024



Standard 11
COMPUTER SCIENCE

Time Allowed: 3.00 Hours

Maximum Marks: 70

I. Choose the correct answer from the given four alternatives: 15×1=15

- 1) Which generation of computer used IC's?
 - a) First generation
 - b) Second generation
 - c) Third generation
 - d) Fourth generation
- 2) 2^{40} referred as
 - a) Kilo
 - b) Tera
 - c) Peta
 - d) Zetta
- 3) Display devices are connected to the computer through
 - a) SCSI port
 - b) USB port
 - c) VGA port
 - d) PS/2 port
- 4) Which of the following is single user operating system?
 - a) Linux
 - b) MS-DOS
 - c) UNIX
 - d) Windows
- 5) Which command is used to 'past'?
 - a) Edit → Paste
 - b) View → Paste
 - c) Fill → Paste
 - d) File → Paste
- 6) How many times the loop is iterated?


```
i := 0
while i ≠ 5
i := i + 1
```

 - a) 6
 - b) 4
 - c) 0
 - d) 5
- 7) Using the following recursive definition

$$a^n = \begin{cases} 1 & \text{if } n = 0 \\ a \times a^{n-1} & \text{otherwise} \end{cases}$$
 how many multiplications are needed to calculate a^{10} ?
 - a) 11
 - b) 10
 - c) 9
 - d) 8
- 8) Which of the following operator is extraction operator in C++?
 - a) >>
 - b) <<
 - c) <>
 - d) <<<
- 9) How many times the following loop will execute?


```
for (int i = 0; i < 5; i++)
```

 - a) 0
 - b) 5
 - c) 4
 - d) 6
- 10) In C++ _____ is used for pointer to a variable.
 - a) -
 - b) +
 - c) ÷
 - d) *
- 11) This can be used alternative to endl command
 - a) \o
 - b) \t
 - c) \n
 - d) \b
- 12) How many categories of data types are available in C++?
 - a) 3
 - b) 5
 - c) 2
 - d) 4
- 13) Which of the following statement is used to terminate the execution of the loop?
 - a) end
 - b) close
 - c) break
 - d) continue
- 14) The smallest individual unit in a program is
 - a) Tokens
 - b) Pseudocode
 - c) Algorithm
 - d) Flowchart
- 15) How many bytes of memory is allocated for the following variable declaration if you are using Dev C++?


```
short int d X;
```

 - a) 1
 - b) 2
 - c) 4
 - d) 8

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2

II. Answer any six questions. Question No. 24 is compulsory: 6×2=12

- 16) List the encoding systems that represent characters in memory.
- 17) What is program counter?
- 18) $(BC9)_{16}$ - convert to equivalent Decimal number.
- 19) What is multi user operating system?
- 20) Define a loop variant.
- 21) What are the importance of void data type?
- 22) Write a note on break and continue statement in C++.
- 23) What is function abstraction?
- 24) Write the output for the following:

```
#include<iostream>
using namespace std;
int main( )
{
    int a=6;
    float b=3.14;
    cout<<a+b;
}
```

III. Answer any six questions. Question No. 33 is compulsory: 6×3=18

- 25) Write the significance features of monitor.
- 26) Give the symbol and Truth table of XNOR gate.
- 27) List out the key features of operating system.
- 28) Write a note on Recycle bin.
- 29) When do you say that a problem is algorithmic in nature?
- 30) What is case analysis?
- 31) Describe the differences between Keywords and Identifiers.
- 32) What are arithmetic operators in C++? Differentiate unary and binary arithmetic operators. Give example for each.
- 33) Write a short program to print the following series:
a) 1 4 7 10 40

IV. Answer all the questions in detail: 5×5=25

- 34) a) Discuss the various generation of computers.
(OR)
b) Explain the types of ROM.
- 35) a) List out the uses of operating system.
(OR)
b) Explain the versions of windows operating system.
- 36) a) What is an entry control loop? Explain any one of the entry controlled loop with suitable example.
(OR)
b) Explain the types of Errors in C++.
- 37) a) Explain the fundamental and derived gates with expression and its truth table.
(OR)
b) Explain the control statement with suitable example.
- 38) a) Write a C++ program to display matrix multiplication table using nested for loop.
(OR)
b) Evaluate the following C++ expressions, where x, y, z are integers and m, n are floating point numbers. The value of x=5, y=4 and m = 2.5.
i) $n = x+y/x$ ii) $z = m*x+y$ iii) $z = (x++) * m+x;$

3
Tamil Nadu District
Government - Assistant Commissioner 2015
XII Computer Science
Marks

- I.
1. c) third generation
 2. b) Java
 3. c) V.O.D.P.24
 4. b) MS-DOC
 5. a) Edit → Paste
 6. d) 5
 7. c) 7
 8. a) >>
 9. b) 5
 10. d) x
 11. c) 10.
 12. a) 3
 13. c) break
 14. a) Tokens
 15. b) 2

- II.
16. BCD - Binary Coded Decimal
EBCDIC - Extended Binary coded Decimal Interchange
ASCII - American Standard Code for Information Interchange.

Unicode

ISCII - Indian standard code for Information Interchange.

(Any two) - 2 marks

17. The program counter (PC) is a special register in the CPU which always keep the address of the next instruction to be executed. - 2 marks

18.
$$(BC9)_{16} = 11 \times 16^2 + 12 \times 16^1 + 9 \times 16^0$$

$$= 11 \times 256 + 12 \times 16 + 9 \times 1$$

$$= 2816 + 192 + 9$$

$$= (3017)_{10}$$

- 2 marks

19. It is used in computers and laptops that allow same data and applications to be accessed by multiple users at the same time. The users can also communicate with each other.
- 2 marks.
20. An invariant for the loop body is known as a loop invariant.
(or)
The property of the variables which remains unchanged by the execution of the loop body is called as loop invariant.
- 2 marks.
21. * void data type specifies an empty set of values.
* It is used as return type for functions that do not return any value.
- 2 marks.
22. i) break statement is a jump statement which terminates the execution of loop and the control is transferred to resume normal execution after the body of the loop.
- 1 mark.
ii) continue statement forces the loop to continue or execute the next iteration.
- 1 mark.
23. * Abstraction is the process of hiding or ignoring the details irrelevant to the task so as the model a problem only by its essential features.
(or)
* After an algorithmic problem is decomposed into subproblems, we can abstract the subproblems as functions.
* A function can also be specified by its input property, and its input-output relation.
- 2 marks.

24. 9.14/ Error

- 2 marks

- Q. 25. * Monitor is the most commonly used output device to display the information.
 * Pictures on a monitor are formed with picture elements called pixels.
 * Types of monitors: CRT, LED, LCD

(Any relevant THREE points)

- 3 marks

26.

A	B	$A+B$
0	0	1
0	1	0
1	0	0
1	1	1



- 3 marks

27. 1. User interface 2. Process management 3. File management
 4. Security management 5. Fault Tolerance 6. Memory management.

- 3 marks

28. * Recycle bin is a special folder to keep the files or folders deleted by the user.
 * which means we still have an opportunity to recover them.

- 3 marks

29. * A problem is algorithmic in nature. When its solution involves the construction of an algorithm.

* Some types of problems can be immediately recognized as algorithmic using input and output data.

- 3 marks

30. * Case analysis splits the problem into an exhaustive set of disjoint cases.
 * For each case, the problem is solved independently.
 * Case analysis statement generalizes into multiple cases.

- 3 marks

Keywords

31)

* Keywords are the reserved words which convey specific meaning to the C++ compiler. * They are the essential elements to construct C++ programs. Example: Switch, if - 1 1/2 marks

* Identifiers are the user defined names given to different parts of the C++ program. viz Variables, functions, arrays, classes etc.

* These are fundamental building blocks of a program.

Example:

Area, a etc - 1 1/2 marks

32)

Arithmetic operators perform simple arithmetic operations like addition, subtraction, multiplication, division etc.

(i) unary operators - Require only one operand
Eg: a++

(ii) Binary operators - Require two operands
- 3 marks

33)

```
#include <iostream>
using namespace std;
```

```
int main ()
{
for (int i=1; i<=40; i+=3)
{
cout << i << "\t";
}
return 0;
}
```

(OR)

Print suitable program

- 3 marks

34) a)

First Generation	1940-1956 (Vacuum Tubes)
Second "	1956-1964 (Transistors)
Third "	1964-1971 (Integrated Circuits)
Fourth "	1971-1980 (Microprocessor VLSI)

Fifth) 1980 - Till (VLSI)
 Sixth) In future (Robotics)
 Explain merits (or) demerits - 5 marks

b)

Types of ROM
 ROM - Read only memory
 PROM - Programmable Read only memory
 EPROM - Erasable)))) 2 marks
 EEPROM - Electrically)))))
 (with Explanation) 3 marks - 5 marks

35) a)

Write any 5 points - 5 marks

b)

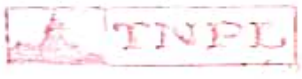
Windows 1.0 - 1985	Windows NT
" 2.0 - 1987	Windows me 2000
" 3.0 - 1992	" 2000 2000
" 95 1995	" XP 2001
" 98 1998	" Vista 2006
	" 7 2009
	" 8 2012
	" 10 2015

With Explanation - 5 marks

36) a)

In Entry - controlled loop, the test expression is evaluated before the entering into a loop, whereas in an exit from the loop

Explain any one for or while with Example
 for (or) while - 5 marks



b) Explain Error details

- * Syntax Error
- * Semantic Error
- * Runtime Error

- 5 marks

37) a)

fundamental gates

AND, OR, NOT

- 2 marks

Derived gates

: NAND, NOR, XOR, XNOR

XNOR

- 3 marks

Truth Table + with Expression

BY

b)

Sequential Statement

Selection))

Iteration))

with Explanation & Diagram

- 5 marks

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38) a)

```
#include <iostream>
```

```
using namespace std;
```

```
int main ()
```

```
{
```

```
for (int c=1; c<10; c++)
```

```
{
```

```
cout << c << " |";
```

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

```
{
```

```
cout << i * c << "\t";
```

```
cout << endl;
```

```
return 0; }
```

(OR) ANY SUITABLE PROGRAM

- 5 marks

b)

$$n = X + Y + X;$$

$$n = 5 + (4/5)$$

$$n = 5 + 0.8$$

$$n = 5.8$$

$$Z = m * X + Y$$

$$Z = (2.5 * 5) + 4$$

$$Z = 12.5 + 4$$

$$Z = 16.5$$

$$Z = 16 \text{ (Z is intaged)}$$

$$Z = (1.5 + 4) * 2.5 + 5$$

$$Z = (5 * 2.5) + 5$$

$$Z = 12.5 + 5$$

$$Z = 17.5$$

$$Z = 17$$

$$Z = 17 \text{ (Z is intaged)}$$

- 5 marks