

ANNUAL EXAMINATION - 2025

STD: XI

COMPUTER SCIENCE

PART - I

I. ANSWER ALL THE QUESTIONS:**15 X 1 = 15**

1. a. RAM
2. a. 1
3. a. MS-DOS
4. d. 4
5. b. S1,S3
6. Int
7. 10
8. main ()
9. t.seconds
10. Class
11. .(dot)
12. Function overloading
13. Base class
14. warez
15. Tamil script code information interchange

PART - II

Answer any six questions. Question No. 24 is compulsory:**16. What are the component of the computer?**

1. Input Unit
2. Central Processing Unit
3. Output Unit

17. What is a program counter?

➤ The Program Counter (PC) is a special register in the CPU which always keeps the address of the next instruction to be executed.

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18. What are called standard icons?

- The icons which are available on desktop by default while installing Windows OS are called standard icons.
- The standard icons available in all Windows OS are My Computer, Documents and Recycle Bin.

19. What are the control flow statements?

- Program statements that cause such jumps are called as "Control flow".
- The basics of control structures such as "Selection", "Iteration" and "Jump" statement.

20. What is the use of setw() format manipulator?

- Setw() format manipulator is used to set the width of the given field into the output.
- The field width determines the minimum number of characters to be written in output.

21. What is polymorphism?

- Polymorphism is the ability of a message or function to be displayed in more than one form.

22. List the operators that cannot be overloaded.

- Scope operator (::)
- Sizeof
- Member selector (.)
- Member pointer selector (*)
- Ternary operator (?:)

23. What is phishing?

- Phishing is a type of computer crime used to attack, steal user data, including login name, password and credit card numbers.

24. Output: (Error in the program)

computer science

16

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PART - III

Answer any six questions. Question No. 33 is compulsory:

25. Convert the given Binary number into its equivalent octal and hexadecimal number. $(101110101)_2$

$$(101110101)_2 = (565)_8 = (175)_{16}$$

26. List the key features of Operating system

- User Interface
- File Management
- Memory Management
- Process Management
- Fault tolerance
- Security Management

27. What is abstraction?

➤ Abstraction is the process of *hiding or ignoring* the details irrelevant to the task so as to model a problem only by its essential features.

28. Define :Recursion

- Recursion is another algorithm design technique, closely related to iteration, but more powerful.
- Using recursion, we solve a problem with a given input, by solving the same problem with a part of the input, and constructing a solution to the original problem from the solution to the partial input.

29. With note an Array of strings.

- An array of strings is a two-dimensional character array.
- The size of the first index (rows) denotes the number of strings and the size of the second index (columns) denotes the maximum length of each string.

Declaration of 2D Array:

```
char Name[6][10];
```

Initialization:

```
char Name[6][10] = {"kishan", "jayasri", "mayon", "kanish", "sudeep", "Mani"};
```

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30. What are the types of constructor?

1. Parameterized Constructor
2. Non-Parameterized Constructor
3. Copy Constructors

31. Differentiate between private, public, protected visibility modes.

Visibility mode	accessible
Private	Cannot be accessed from outside the class.
protected	Cannot be accessed from outside the class, but it can be accessed in derived classes.
Public	Accessed anywhere inside, outside the class but within a program.

32. Write a short note on Tamil Virtual Academy.

- With the objectives of spreading Tamil to the entire world through internet, Tamil Virtual University was established on 17th February 2001 by the Govt. of Tamilnadu.
- Now, this organisation functioning with the name "Tamil Virtual Academy". This organisation offers different courses regarding Tamil language, Culture, heritage etc., from kindergarten to under graduation level.
- Website: <http://www.tamilvu.org/index.php>

33. #include<iostream>

```
using namespace std;
int main ()
{
int i,sum=0;
for(i=1; i<=10;i++)
{
sum=sum+i;
}
cout<< "The sum of 1 to 10 is "<<sum"
return 0;
}
```

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PART - IV

34. a. Explain the following:**a. Inkjet Printer b. Multimedia projector c. Barcode/QR code****Reader****(i) Inkjet Printers:**

- Inkjet Printers use colour cartridges which combined Magenta, Yellow and Cyan inks to create colour tones.
- A black cartridge is also used for monochrome output.
- Inkjet printers work by spraying ionised ink at a sheet of paper.
- The speed of Inkjet printers generally range from 1-20 PPM (Page Per Minute).

(ii) Multimedia Projectors:

- Multimedia projectors are used to produce computer output on a big screen.
- These are used to display presentations in meeting halls or in classrooms.

(iii) Bar Code / QR Code Reader:

- A Bar code is a pattern printed in lines of different thickness.
- The Bar code reader scans the information on the bar codes transmits to the Computer for further processing.
- The system gives fast and error free entry of information into the computer.

QR (Quick response) Code:

- The QR code is the two dimension bar code which can be read by a camera and processed to interpret the image.

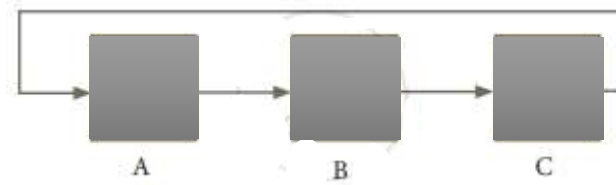
Or

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b. circulate the contents:

**Specifications:**

1. circulate (A, B, C)
 2. -- inputs : A, B, C all are real numbers
 3. -- outputs: A, B, C all are real numbers
- T:=C
C:=B
B:=A
A:=T

Algorithm:

1. circulate (A, B, C)
2. T:=C
3. C:=B
4. B:=A
5. A:=T

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Or

35. a. Explain the characteristics of a microprocessor.

A Microprocessor's performance depends on the following characteristics:

a) Clock speed**b) Instruction set****c) Word size****a) Clock Speed**

- Every microprocessor has an **internal clock** that regulates the speed at which it executes instructions.
- The speed at which the microprocessor executes instructions is called the **clock speed**.
- Clock speed is measured in MHz (Mega Hertz) or in GHz (Giga Hertz).

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b) Instruction Set

- A command which is given to a computer to perform an operation on data is called an **instruction**.
- Basic set of machine level instructions that a microprocessor is designed to execute is called as an **instruction set**.
- This instruction set carries out the following types of operations:
 - Data transfer
 - Arithmetic operations
 - Logical operations
 - Control flow • Input/output

c) Word Size

- The number of bits that can be processed by a processor in a single instruction is called its word size.
- **Word size** determines the amount of RAM that can be accessed by a microprocessor at one time and the total number of pins on the microprocessor.
- Total number of input and output pins in turn determines the architecture of the microprocessor.

OR

b. What entry control loop? Explain any one of the entry control loop with suitable example. Entry control loop:

- Loop body will be executed if the condition is true otherwise the loop will not be executed.

Examples of Entry Controlled Loop:

- *for loop*
- *while loop*

for loop:

The for-loop is the easiest looping statement which allows code to be executed repeatedly.

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The general syntax is: Flow chart:

for (initialization(s); test-expression; update expression(s))

{

Statement 1; Statement 2;

}

Statement-x;

Example Program:

#include <iostream> using namespace std;

int main ()

{ int i;

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

cout<< "value of i : " <<i<<endl;

return 0;

}

Output

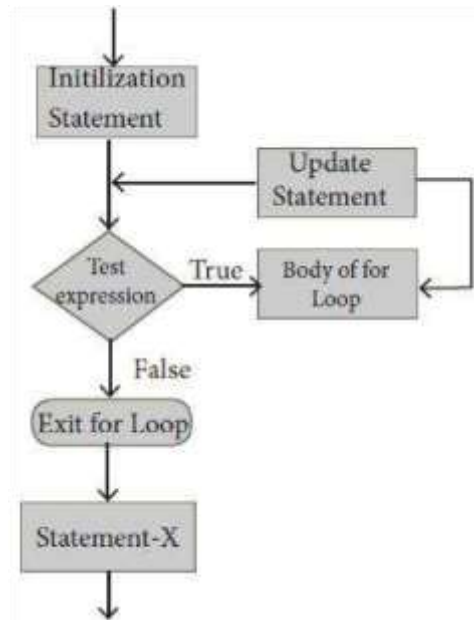
value of i : 0

value of i : 1

value of i : 2

value of i : 3

value of i : 4



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or

Write a program to find sum of the series #include <iostream>

using namespace std; int main()

{ clrscr();

long i,n,x,sum=1;

cout<<"1+x+x^2+.....+x^n"; cout<<"\n

Enter the value of x and n:";

cin>>x>>n; for(i=1;i<=n;++i)

sum+=pow(x,i); cout<<"\n

sum="<<sum;

getch(); }

output:

```

1+x+x^2+.....+x^n
Enter the value of x and n:
5
2
Sum=31
  
```

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36. a. (i) Add: $1101010_2 + 101101_2 = 10010111_2$ (ii) Subtract: $- 1101011_2 - 111010_2 = 110001_2$

OR

b) Explain Call by value method with suitable example.

- Call by value method copies the value of an actual parameter into the formal parameter of the function.
- In this case, changes made to formal parameter within the function will have no effect on the actual parameter.

Example Program:

```
#include<iostream>
using namespace std;
void display(int x)
{
int a=x*x;
cout<<"\n\n The Value inside display function (a * a):"<<a;
}
int main()
{
int a;
cout<<"\n\n Enter the Value for A :";
cin>>a;
display(a);
cout<<"\n\n The Value inside main function "<<a;

return(0);
}
```

Output :

```
Enter the Value for A : 5
The Value inside display function (a * a) : 25
The Value inside main function 5
```

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37.a. Write the important steps one must follow for creating and executing a C++ program.

(1) Creating Source code

- Creating includes typing and editing the valid C++ code as per the rules followed by the C++ Compiler.

(2) Saving source code with extension .cpp

- After typing, the source code should be saved with the extension .cpp

(3) Compilation

- This is an important step in constructing a program.
- In compilation, compiler links the library files with the source code and verifies each and every line of code.
- If any mistake or error is found, it will throw error message.
- If there are no errors, it translates the source code into machine readable object file with an extension .obj

(4) Execution

- This is the final step of a C++ Program.
- In this stage, the object file becomes an executable file with extension .exe.
- Once the program becomes an executable file, the program has an independent existence.
- This means, you can run your application without the help of any compiler or IDE.

OR

b. What are the advantages of OOPs.

Advantages of OOP:**1. Re-usability:**

- "Write once and use it multiple times" you can achieve this by using class.

2. Redundancy:

- Inheritance is the good feature for data redundancy. If you need a same functionality in multiple class you can write a common class for the same functionality and inherit that class to sub class.

3. Easy Maintenance:

- It is easy to maintain and modify existing code as new objects can be created with small differences to existing ones.

4. Security:

- Using data hiding and abstraction only necessary data will be provided thus maintains the security of data.

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38. Debug the following C++ program.

Line No.	Error statement	Corrected Statement
1	~INCLUDE (iostream)	#include<iostream>
2	~include<string.h>	#include<string.h>
6	PUBLIC;	Public:
8	VOID getstring(char str[]):	void getstrings(char str[])
10	strcpy(s,str):	strcpy(s,str);
13	};	};
16	strcat(s:ob:s);	strcat(s,ob.s);
17	cout>>"\n concatenated string is:"<<s;	Cout<<"\n concatenated string is:"<<s;
19	int main[]	Int main()
23	cout>>"\n Enter First String:";	cout<<"\n Enter First String:";
24	cin<<string1;	cin>>string1;
27	cin<<string2;	cin<<string2;
31	};	}

OR

b. Write the output of the following C++ program.

Output:

Enter the age: 18

Enter the height: 155.6

Enter the weight: 43.5

The values entered 18 155.6 43.5

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