

PUBLIC EXAMINATION MAY – 2022**11TH COMPUTER SCIENCE****ANSWER KEY****1 Marks:**

1. A) Third
2. B) D
3. A) Cache Memory
4. B) MS-DOS
5. A) Edit → Paste
6. A) S2
7. C) Bjarne Stroustrup
8. A) 3
9. B) 9
10. D) 10
11. A) Array
12. D) Reusability
13. C) Member Functions
14. B) Computer Ethics
15. A) Android

2 Marks:**16. Popular Operating Systems:**

Personal computer OS : Windows, UNIX and Linux.

Mobile device OS: Android and iOS

17. $(44)_{10} = (?)_2$

$$(44)_{10} = (101100)_2$$

18. 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. Algorithm:

An algorithm is a step by step sequence of statements intended to solve a problem.

20. Syntax to declare 2D array:

```
data-type array_name[row-size][col-size];
```

21. Function Overloading:

The ability of the function to process the message or data in more than one form is called as function overloading.

22. Derived Class is Power Packed Class:

The derived class is a power packed class, as it can add additional attributes and methods and thus enhance its functionality.

23. TSCII:

TSCII (Tamil Script Code for Information Interchange) is the first coding system to handle our Tamil language in an analysis of an encoding scheme that is easily handled in electronic devices, including non-English computers. This encoding scheme was registered in IANA (Internet Assigned Numbers Authority) a unit of ICANN.

24. Importance of void data type:

To indicate the function does not return a value

To declare a generic pointer.

3 Marks:**25. Classifications of Microprocessors Based on the Data width:**

- 8-bit microprocessor
- 16-bit microprocessor
- 32-bit microprocessor
- 64-bit microprocessor

26. Characteristics of Sixth Generation Computers: (Deleted Portion)

In the Sixth Generation, computers could be defined as the era of intelligent computers, based on Artificial Neural Networks. One of the most dramatic changes in the sixth generation will be the explosive growth of Wide Area Networking. Natural Language Processing (NLP) is a component of Artificial Intelligence (AI). It provides the ability to develop the computer program to understand human language.

27. Case Analysis:

Case analysis statement generalizes it to multiple cases. Case analysis splits the problem into an exhaustive set of disjoint cases.

1. case C1
2. S1
3. case C2
4. S2
5. case C3
6. S3
7. else
8. S4

28. Keywords:

Keywords are the reserved words which convey specific meaning to the C++ compiler.

C++ Keywords: if, else, for, while, do.

No, Keywords can't be used as identifiers.

29. Null statement and Compound statement:

Null statement	Compound statement
The "null or empty statement" is a statement containing only a semicolon.	C++ allows a group of statements enclosed by pair of braces {}. This group of statements is called as a compound statement or a block.
;	{ statement1; statement2; statement3; }

30. Syntax of Switch:

```
switch(exp)
{
    case constant 1:
        statement(s);
        break;
    case constant 2:
        statement(s);
        break;
    .
    .
    .
    default:
        statement(s);
}
```

Purpose of Switch:

The switch statement is a multi-way branch statement. It provides an easy way to dispatch execution to different parts of code based on the value of the expression. The switch statement replaces multiple if-else sequence.

31. User Defined Functions:

C++ also provides the facility to create new functions for specific task as per user requirement. The name of the task and data required (arguments) are decided by the user and hence they are known as User defined functions.

32. Ethical Issues:

- Cyber crime
- Software Piracy
- Unauthorized Access
- Hacking
- Use of computers to commit fraud
- Sabotage in the form of viruses
- Making false claims using computers

33. C++ Program to sum the numbers from 1 to 10 using for loop:

```
#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; }
```

Output:

The sum of 1 to 10 is 55

5 Marks:

34. A) Data and Information

Data	Information
Data is defined as an unprocessed collection of raw facts, suitable for communication, interpretation or processing.	Information is a collection of facts from which conclusions may be drawn. In simple words we can say that data is the raw facts that is processed to give meaningful, ordered or structured information
For example, 134, 16 'Kavitha', 'C' are data. This will not give any meaningful message.	For example Kavitha is 16 years old. This information is about Kavitha and conveys some meaning

34 B) Types of ROM:

Read Only Memory refers to special memory in a computer with pre-recorded data at manufacturing time which cannot be modified.

Once the data has been written onto a ROM chip, it cannot be modified or removed and can only be read. ROM retains its contents even when the computer is turned off. So, ROM is called as a non-volatile memory.

Programmable Read Only Memory:

Programmable read only memory is also a non-volatile memory on which data can be written only once. Once a program has been written onto a PROM, it remains there forever. Unlike the main memory, PROMs retain their contents even when the computer is turned off.

Erasable Programmable Read Only Memory:

Erasable Programmable Read Only Memory is a special type of memory which serves as a PROM, but the content can be erased using ultraviolet rays. EPROM retains its contents until it is exposed to ultraviolet light. The ultraviolet light clears its contents, making it possible to reprogram the memory.

Electrically Erasable Programmable Read Only Memory:

Electrically Erasable Programmable Read Only Memory is a special type of PROM that can be erased by exposing it to an electrical charge. Like other types of PROM, EEPROM retains its contents even when the power is turned off. Comparing with all other types of ROM, EEPROM is slower in performance.

35 A) Versions of windows operating system:

Question asked from Deleted Portion.

35 b) Specification of an algorithm for computing the square root of a number:

1. Let us name the algorithm square_root.
 2. It takes the number as the input. Let us name the input n. n should not be negative.
 3. It produces the square root of n as the output. Let us name the output y. Then n should be the square of y.
- Now the specification of the algorithm is
square_root(n)
-- inputs: n is a real number, $n \geq 0$.
-- outputs: y is a real number such that $y^2 = n$.

36. A) Types of Errors:

Type of Error	Description
Syntax Error	<ul style="list-style-type: none"> • Syntax is a set of grammatical rules to construct a program. Every programming language has unique rules for constructing the sourcecode. • Syntax errors occur when grammatical rules of C++ are violated. • Example: if you type as follows, C++ will throw an error. cout << "Welcome to Programming in C++"

	<ul style="list-style-type: none"> As per grammatical rules of C++, every executable statement should terminate with a semicolon. But, this statement does not end with a semicolon.
Semantic Error	<ul style="list-style-type: none"> A Program has not produced expected result even though the program is grammatically correct. It may be happened by wrong use of variable / operator / order of execution etc. This means, program is grammatically correct, but it contains some logical error. So, Semantic error is also called as "Logic Error".
Run Time Error	<ul style="list-style-type: none"> A run time error occurs during the execution of a program. It occurs because of some illegal operation that takes place. For example, if a program tries to open a file which does not exist, it results in a run-time error

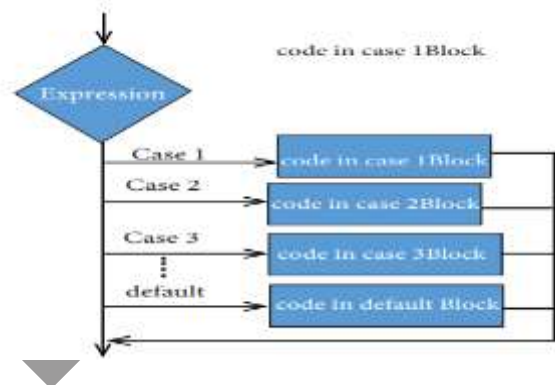
36. B) Switch Statement:

Description:

The switch statement is a multi-way branch statement. It provides an easy way to dispatch execution to different parts of code based on the value of the expression. The switch statement replaces multiple if-else sequence.

Syntax of Switch:

```
switch(exp)
{
    case constant 1:
        statement(s);
        break;
    case constant 2:
        statement(s);
        break;
    .
    .
    .
    default:
        statement(s);
}
```



Example of Switch:

```
switch(y)
{
    case 1:
        cout<<"ONE";
        break;
    case 2:
        cout<<"TWO";
        break;
    default:
        cout<<"WELCOME";
}
```

37. A) Parts of a loop:

Every loop has four elements that are used for different purposes.

These elements are

- Initialization expression
- Test expression
- Update expression
- The body of the loop

Initialization expression(s): The control variable(s) must be initialized before the control enters into loop. The initialization of the control variable takes place under the initialization expressions. The initialization expression is executed only once in the beginning of the loop.

Test Expression: The test expression is an expression or condition whose value decides whether the loop-body will be executed or not. If the expression evaluates to true (i.e., 1), the body of the loop gets executed, otherwise the loop is terminated.

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

Update expression: It is used to change the value of the loop variable. This statement is executed at the end of the loop after the body of the loop is executed.

The body of the loop: A statement or set of statements forms a body of the loop that are executed repetitively. In an entry-controlled loop, first the test-expression is evaluated and if it is nonzero, the body of the loop is executed otherwise the loop is terminated. In an exit-controlled loop, the body of the loop is executed first then the test-expression is evaluated. If the test-expression is true the body of the loop is repeated otherwise loop is terminated.

37 b) Output:

Enter Number 1= 1

Enter Number 2= 2

Enter Number 3= 3

Enter Number 4= 4

Enter Number 5= 5

Enter Number 6= 6

Enter Number 7= 7

Enter Number 8= 8

Enter Number 9= 9

Enter Number 10= 10

There are 5 Even Numbers

There are 5 Odd Numbers

38 A) Debugging:

Error	Correction
%include(iostream.h)	#include<iostream.h>
Class A	class A
public;	public:
int a1,a2:a3;	int a1,a2,a3;
Void getdata[]	void getdata()
a2=13;	a2=14;
Class B :: public A()	class B : public A
PUBLIC	public:
voidfunc()	void func()
int b1:b2:b3;	int b1,b2,b3;
A::getdata[];	A.getdata();

a3=a3;	b3=a3;
cout<<b1<<'t'<<b2<<'t'<<b3;	cout<<b1<<'t'<<b2<<'t'<<b3;
clrscr()	clrscr();
Der1:func();	der.func();

38 B)

Advantages of object oriented programming:

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

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.

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

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



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