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FIRST REVISION TEST –APRIL 2020

COMPUTER SCIENCE

Part –I

1.Fourth

2.48

3.Abacus

4.Peta

5.Microprocessor

6.Rom

7.System software

8.Graphical User Interface

9.Operating System

10.Window

11.Algorithm

12.5,4

13.C With classes

14.>>

15.3

Part -B

16.Answer

Data:

Data is a collection of facts from which the information may be derived. It is an unprocessed collection of facts in a manner suitable for communication, interpretation, or processing.

Example: 134, 16, Kavitha Does not give meaning.

Information:

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Information is a collection of facts from the conclusions that can be drawn. Information is a processed fact, active, Business based and transformed from data.
Example: Kavitha is 16 years old. Conveys meaning.

17Answer

$(65)_{10}$ =$(1000001)_2$

18**. Dynamic Initialization of variables**

A variable can be initialized during the execution of a program. It is known as"Dynamic initialization". For example,

```
int num1, num2, sum;
sum = num1 + num2;
```

19. **Uses of Operating System**

The main use of Operating System is

- To ensure that a computer can be used to extract what the user wants it do.
- Easy interaction between the users and computers.
- Starting computer operation automatically when power is turned on (Booting).
- Controlling Input and Output Devices
- Manage the utilisation of main memory.
- Providing security to user programs.

20. **Recycle bin**

Recycle bin is a special folder to keep the files or folders deleted by the user, which means you still have an opportunity to recover them. The user cannot access the files or folders available in the Recycle bin without restoring it. To restore file or folder from the Recycle Bin

- *Open Recycle bin.*
- Right click on a file or folder to be restored and select **Restore** option from the pop-up menu.
- To restore multiple files or folders, select Restore all items.
- To delete all files in the Recycle bin, select **Empty the Recycle Bin.**

21. **What is the format of the specification of an algorithm?**

Answer:
Let P be the required property of the inputs and Q the property of the desired outputs.
Format of specification of an algorithm:

1. Algorithm name (Inputs)
2. Inputs – P
3. Outputs – Q

22.Define Token

- The smallest individual unit in a program is known as a Token or a Lexical unit

Types

C++ has the following tokens:

Keywords Id , Identifiers , Literals , operators , punctuators

23. Modulus operators

Modulus (To find the reminder of a division)

Ex. 10 % 3 = 1(Remainder of the division

24.List out the characteristics of microprocessor
1.Clock Speed 2.Instruction set 3.Word Size

Part-C
25.Answer
$(49)_{10}$

26.**Classification of Microprocessors based on the Data Width**

Depending on the data width, microprocessors can process instructions. The microprocessors can be classified as

follows:

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

27.Prominent O/S

- UNIX
- MICROSOFT
- WINDOWS
- LINUX
- IOS
- ANDROID
- MAC OS

28. **Two ways in which you can create a new folder:**

Method I:

Step 1: Open **Computer Icon**.

Step 2: Open any drive where you want to create a new folder. (For example select D:)

Step 3: Click on File → New → Folder.

Step 4: A new folder is created with the default name "New folder". (Figure 5.19)

Step 5: Type in the folder name and press Enter key. (Figure 5.20 shows the newly created Folder named "Test Folder ").

Method II:

In order to create a folder in the desktop:

Step 1: In the Desktop, right click → New → Folder. (Figure 5.20 Shown the procedure)

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Step 2: A Folder appears with the default name "New folder" and it will be highlighted as shown in the Figure 5.22.

Step 3: Type the name you want and press Enter Key.

Step 4: The name of the folder will change.

29. **Is C++ case sensitive? What is meant by the term "case sensitive"?**

Answer:

C++ is a case-sensitive programming language so, all the keywords must be in lowercase. Case sensitive means that the uppercase and lowercase letters are considered differently.

30**. What is case analysis?**

Answer:

Case analysis splits the problem into an exhaustive set of disjoint cases. For each case, the problem is solved independently. If C_1, C_2, and C_3 are conditions, and S_1, S_2, S_3 and S_4 are statements, a 4-case analysis statement has the form,

i) case C_1 ii) S_1 iii) case C_2 iv) S_2 v) case C_3 vi) S_3 vii) else viii) S_4

31. **Int data type:**

Integer data type accepts and returns only integer numbers. If a variable is declared as an **int**, C++ compiler allows storing only integer values into it. If you try to store a fractional value in an int type variable it will accept only the integer portion and the fractional part will be ignored.

For Example

```
int num=12;
```

32. **Conditional Operator:**

In C++, there is only one conditional operator. **?:** is a conditional Operator which is also known as Ternary Operator. This operator is used as an alternate to if … else control statement. We will learn more about this operator in later chapters along with if …. else structure.

33**. Different between Alternative statement Iterative statement**

Alternative statement

A condition is a phrase that describes a test of the state. If C is a condition and both

S1 and S2 are statements, then

```
if C
  S1
else
  S2
```

Iterative statement

An iterative process executes the same action repeatedly, subject to a condition C. If C is a condition and S is a statement, then

```
while C
S
```

Part- IV

34.**Conversion of fractional Decimal to Binary**

The method of **repeated multiplication by 2** has to be used to convert such kind of decimal fractions.

The steps involved in the method of **repeated multiplication by 2**:

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Step 1: Multiply the decimal fraction by 2 and note the integer part. The integer part is either 0 or 1.

Step 2: Discard the integer part of the previous product. Multiply the fractional part of the previous product by 2. Repeat Step 1 until the same fraction repeats or terminates (0).

Step 3: The resulting integer part forms a sequence of 0s and 1s that become the binary equivalent of decimal fraction.

Step 4: The final answer is to be written from first integer part obtained till the last integer part obtained.

	Integer part	
$0.2 \times 2 = 0.4$	0	(first integer part obtained)
$0.4 \times 2 = 0.8$	0	

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$0.8 \times 2 = 1.6$		1
$0.6 \times 2 = 1.2$		1
$0.2 \times 2 = 0.4$	0	(last integer part obtained)

(or)

b) (i) Answer (10011110)2

(ii)Answer (01111001)2

35. a) Explain the characteristics of a microprocessor.

Answer:

A Microprocessor's performance depends on the following characteristics:

- Clock speed
- Instruction set
- 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 ¡s called the clock speed. Clock speed is measured in MHz (MegaHertz) or in GHz (Giga Hertz).

b) Instruction Set

A command which is given to a computer to perform an operation on data is called an instruction. A basic set of machine-level instructions that a microprocessor is designed to execute ¡s called an instruction set.

This instruction set carries out the following types of operations:

- Data transfer
- Arithmetic operations
- Logical operations
- Control flow
- Input/output

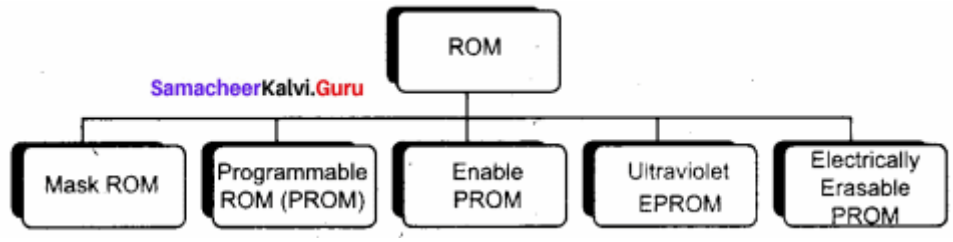
c) Word Size

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) Explain the types of ROM.

Answer:



Types of ROM

Read-Only Memory (ROM):

Read-Only Memory refers to special memory in a computer with pre-recorded data at manufacturing time which cannot be modified. The stored programs that start the computer and perform diagnostics are available in ROMs. ROM stores critical programs such as the program that boots the computer. 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 non-volatile memory.

Programmable Read-Only Memory (PROM):
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.

The PROM differs from ROM. PROM is manufactured as blank memory, whereas a ROM is programmed during the manufacturing process itself. A PROM programmer or a PROM burner is used to write data to a PROM chip. The process of programming a PROM is called burning the PROM.

Programmable Read-Only Memory (EPROM):
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.
An EPROM differs from a PROM, PROM can be written only once and cannot be erased.

Electrically Erasable Programmable Read-Only Memory (EEPROM):
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.

36. a)

Copying Files and Folders to removable disk

There are several methods of transferring files to or from a removable disk.

- Copy and Paste
- Send To

METHOD I - Copy and Paste

- Plug the USB flash drive directly into an available USB port.
- If the USB flash drive or external drive folder does NOT open automatically, follow these steps:

• Click Start→Computer.

Double-click on the Removable Disk associated with the USB flash drive

• Navigate to the folders in your computer containing files you want to transfer.

Right-click on the file you want to copy, then select **Copy.**

Return to the Removable Disk window, right-click within the window, then select **Paste**.

(or)

b) **Finding Files and Folders**

You can use the **search** box on the **Start** menu to quickly search a particular folder or file in the computer or in a specific drive.

To find a file or folder:

1. Click the **Start** button, the **search** box appears at the bottom of the start menu.
2. Type the name of the file or the folder you want to search. Even if you give the part of the file or folder name, it will display the list of files or folders starting with the specified name. (Figure 5.23)

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3. The files or the folders with the specified names will appear, if you click that file, it will directly open that file or the folder.

4. There is another option called "**See more results"** which appears above the **search** box.

5. If you click it, it will lead you to a **Search Results** dialog box where you can click and open that file or the folder.

Searching Files or folders using Computer icon

1. Click **Computer Icon** from desktop or from **Start menu**.

2. The Computer disk drive screen will appear and at the top right corner of that screen, there is a **search** box option. (Figure 5.24)

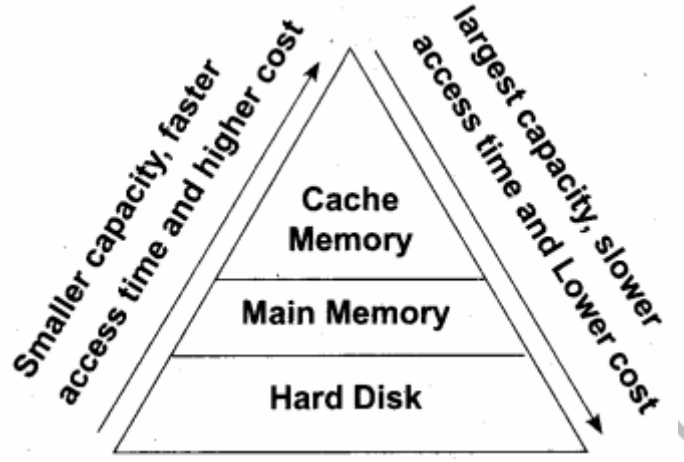
3. Type the name of the file or the folder you want to search. Even if you give the part of the file or folder name, it will display the list of files or folders starting with the specified name.

4.Just click and open that file or the folder.

37a) Arrange the memory devices in ascending order based on the access time.

Answer:

A memory is just like a human brain. It is used to store data and instructions. Computer memory is the storage space in the computer, where data and instructions are stored. There are two types of accessing methods to access (read or write) the memory. They are sequential access and random access. In sequential access, the memory is accessed in an orderly manner from starting to end. But, in random access, any byte of memory can be accessed directly without navigating through previous bytes. Different memory devices are arranged according to the capacity.



37b) **Elements of a window**

Figure 5.9 helps to understand the elements of a window.

1. Title Bar – The title bar will display the name of the application and the name of the document opened. It will also contain minimize, maximize and close button.

2 Menu Bar

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The menu bar is seen under the title bar. Menus in the menu bar can be accessed by pressing Alt key and the letter that appears underlined in the menu title. Additionally, pressing Alt or F10 brings the focus on the first menu of the menu bar.

In Windows 7, in the absence of the menu bar, click **Organise** and from the drop down menu, click the **Layout** option and select the desired item from that list.

3. The Workspace

The workspace is the area in the document window to enter or type the text of your document. Figure 5.10 Shows the workspace area in the document window.

4. Scroll bars - The scroll bars are used to scroll the workspace horizontally or vertically. Figure 5.9 shows the Scroll bars.

5. Corners and borders

The corners and borders of the window helps to drag and resize the windows. The mouse pointer changes to a double headed arrow when positioned over a border or a corner. Drag the border or corner in the direction indicated by the double headed arrow to the desired size as shown in Figure 5.9. The window canbe resized by dragging the corners diagonally across the screen.

38.a) **Operators are classified as:**

(1) Arithmetic Operators
(2) Relational Operators
(3) Logical Operators
(4) Assignment Operators
(5) Conditional Operator

(1) Arithmetic Operators

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

Operator	Operation	Example
+	Addition	10 + 5 = 15
-	Subtraction	10 – 5 = 5
*	Multiplication	10 * 5 = 50
/	Division	10 / 5 = 2 (Quotient of the division)
%	Modulus (To find the reminder of a division)	10 % 3 = 1(Remainder of the division)

The above mentioned arithmetic operators are binary operators which requires minimum of two operands.

Increment and Decrement Operators

++ (Plus, Plus) Increment operator

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-- (Minus, Minus) Decrement operator

An increment or decrement operator acts upon a single operand and returns a new value. Thus, these operators are unary operators. The increment operator adds 1 to its operand and the decrement operator subtracts 1 from its operand. For example,

x++ or ++ x is the same as **x = x+1;**

It adds 1 to the present value of x

x -- or -- x is the same as to **x = x−1**;

It subtracts 1 from the present value of x

The ++ or -- operators can be placed either as prefix (before) or as postfix (after) to a variable. With the prefix version, C++ performs the increment / decrement before using the operand.

(2) Relational Operators

Relational operators are used to determine the relationship between its operands. When the relational operators are applied on two operands, the result will be a Boolean value i.e 1 or 0 to represents True or False respectively. C++ provides six relational operators. They are,

Operator	Operation	Example
>	Greater than	a > b
<	Less than	a < b
>=	Greater than or equal to	a >= b
<=	Less than or equal to	a <= b
==	Equal to	a == b
!=	Not equal	a != b

Logical Operators

A logical operator is used to evaluate logical and relational expressions. The logical operators act upon the operands that are themselves called as logical expressions. C++ provides three logical operators.

Table 9.3 Logical Operators

Operator	Operation	Description
&&	**AND**	The logical AND combines two different relational expressions in to one. It returns 1 (True), if both expression are true, otherwise it returns 0 (false).
||	**OR**	The logical OR combines two different relational expressions in to one. It returns 1 (True), if either one of the expression is true. It returns 0 (false), if both the expressions are false.

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!	**NOT**	NOT works on a single expression / operand. It simply negates or inverts the truth value. i.e., if an operand / expression is 1 (true) then this operator returns 0 (false) and vice versa

a<b) && (b<c)	1 (True)
(a>b) && (b<c)	0 (False)
(a<b) || (b>c)	1 (True)
!(a>b)	1 (True)

C++ uses different types of assignment operators. They are called as Shorthand assignment operators.

Operator	Name of Operator	Example
+=	Addition Assignment	a = 10; c = a += 5;(ie, a = a + 5) c = 15
-=	Subtraction Assignment	a = 10; c = a -= 5;(ie. a = a – 5) c = 5
*=	Multiplication Assignment	a = 10; c = a *= 5;(ie. a = a * 5) c = 50
/=	Division Assignment	a = 10; c = a /= 5;(ie. a = a / 5) c = 2
%=	Modulus Assignment	a = 10; c = a %= 5; (ie. a = a % 5) c = 0

Conditional Operator:

In C++, there is only one conditional operator. **?:** is a conditional Operator which is also known as Ternary Operator. This operator is used as an alternate to if ... else control statement. We will learn more about this operator in later chapters along with if .... else structure.

38.b)#include<iostream>
using namespace std;
int main()
{
Int m1,m2,m3,sum;
Cout<<"Enter the 3 subject mark";
Cin>>m1>>m2>>m3;

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```
Sum=m1+m2+m3;
Cout<<"total mark is "<<sum;
Return 0;
}
```

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