15TH MAY ASSIGNMENT QUESTIONS

1. What is a computer?
Ans: A computer is an electronic device that processes and stores data. It consists of hardware components, such as a central processing unit (CPU), memory, storage devices, input/output devices, and a motherboard that connects them.

2. What is RAM?
Ans: RAM stands for Random Access Memory. It is a type of computer memory that provides temporary storage for data that the computer is actively using.

3. Where is data store in a computer?
Ans: 1. Hard Disk Drives (HDDs) and Solid-State Drives (SSDs): They store data persistently even when the computer is powered off. HDDs use rotating magnetic disks to store and retrieve data, while SSDs use flash memory chips.

2. Random Access Memory (RAM): RAM is a temporary storage location. When the computer is powered on, the operating system and actively used data are loaded into RAM for quick access by the CPU. However, RAM loses its contents when the computer is turned off or restarted.

3. Cache Memory: Cache memory is a smaller and faster type of memory located closer to the CPU. It stores frequently accessed data and instructions to speed up the processing time.

4. What is that input device used to type text and numbers on a document in the computer system?
Ans: The input device used to type text and numbers on a computer document is a keyboard.

5. What are the output devices?
Ans: Output devices are peripherals or components of a computer system that display or transmit data generated by the computer. Some common examples of output devices include:

1. **Monitor/Display: A device that presents visual information and graphics to the user.**
2. **Printer: An output device that produces hard copies of digital documents or images.**
3. **Speakers: Devices that produce audio output, allowing users to listen to sound or multimedia content.**
4. **Headphones: Audio devices worn over the ears, providing private sound output.**

6. **What is the input device that allows the user to move the cursor or pointer on the screen?**

Ans: The input device that allows the user to move the cursor or pointer on the screen is typically a mouse.

7. **Which language is directly understood by the computer without a translation program?**

Ans: The language that is directly understood by the computer without a translation program is machine language or machine code.

8. **What are the Input devices?**

Ans: Input devices are peripherals or components of a computer system that allow users to input or provide data and instructions to the computer. Some common examples of input devices include:

1. **Keyboard: A device with a set of keys that allows users to enter text, numbers, and commands into the computer.**
2. **Mouse: A handheld pointing device that enables users to move the cursor or pointer on the screen and perform selections and clicks.**
3. **Touchscreen: A display screen that can detect and respond to touch inputs, allowing users to interact directly with the displayed content.**
4. **Trackpad: A touch-sensitive pad commonly found on laptops that functions similarly to a mouse, allowing users to control the cursor.**

9. **What is Programming language?**

Ans: A programming language is a formal language that allows programmers to write instructions or code to communicate with a computer and create software applications, scripts, or algorithms.

10. **Why do we need a programming language?**

Ans: We need programming languages for several reasons:

1. **Communication with computers: Programming languages provide a means for humans to communicate with computers effectively. They offer a structured and understandable syntax and vocabulary that can be used to write instructions and algorithms.**

2. **Software development: Programming languages are essential for developing software applications, scripts, and algorithms. They provide the tools and constructs necessary to define data structures, manipulate data, control program flow, and implement logic.**

11. What are the features of Java?
Ans: Java is a popular programming language known for its versatility, platform independence, and extensive library support. Some of the key features of Java include:

1. **Object-Oriented: Java is an object-oriented programming (OOP) language, which means it supports concepts such as encapsulation, inheritance, and polymorphism. This allows for modular and organized code development.**

2. **Platform Independence: Java programs can run on any platform with a Java Virtual Machine (JVM). The "write once, run anywhere" principle allows Java code to be compiled into bytecode, which can be executed on any system with a compatible JVM.**

12. What is an object?
Ans: an object is a fundamental concept in object-oriented programming (OOP). An object represents a particular instance of a class, which is a blueprint or template for creating objects.

13. What is a class?
Ans: In object-oriented programming (OOP), a class is a blueprint or template that defines the structure, behaviour, and initial state for creating objects.

14. Explain about the main () method in Java?
Ans: In Java, the main () method is a special method that serves as the entry point for a Java program. It is the starting point of execution when a Java application is run. The main () method has a specific signature and structure that must be followed:

```
public class filename
{
public static void main (String args [ ])
  {
    // Code to be executed
  }
}
```

15. What is statically typed and dynamically typed Programming Language?
Ans: A statically typed programming language requires variables to be declared with their data types at compile-time, and the type of a variable cannot change during runtime. Examples of statically typed languages include Java, C++, and C#.

In contrast, a dynamically typed programming language does not require explicit declaration of variable types. The type of a variable is determined during runtime based on the assigned value, and it can change dynamically throughout the program. Examples of dynamically typed languages include Python, JavaScript, and Ruby.

16. What is the variable in Java?
Ans: In Java, a variable is a named storage location used to hold a value of a specific type. It is declared using a combination of a data type and a variable name.

17. How To Assign a Value to Variable?
Ans: To assign a value to a variable in most programming languages, including Java, you use the assignment operator (=). Here's the general syntax:
Example: int myNumber = 42;

18. What are Primitive data type in Java?
Ans: In Java, there are eight primitive data types, which are the most basic types built into the language. They represent simple values and are not objects. The primitive data types in Java are as follows:

1. Boolean: Represents a Boolean value, either true or false.
2. byte: Represents a signed 8-bit integer value. Range: -128 to 127.
3. short: Represents a signed 16-bit integer value. Range: -32,768 to 32,767.
4. int: Represents a signed 32-bit integer value. Range: -2,147,483,648 to 2,147,483,647.
5. long: Represents a signed 64-bit integer value. Range: -9,223,372,036,854,775,808 to 9,223,372,036,854,775,807.
6. float: Represents a single-precision 32-bit floating-point value.
7. double: Represents a double-precision 64-bit floating-point value.
8. char : Represents a single character. Range: 0 to 65,535 (unsigned 16-bit value).

19. What are the identifiers in Java?
Ans: In Java, identifiers are names used to identify various elements in a program, such as variables, methods, classes, and more. Here are some key rules and conventions for identifiers in Java:

- ➔ An identifier can consist of letters (a-z, A-Z), digits (0-9), underscores (_), and dollar signs ($).
- ➔ The first character of an identifier must be a letter, an underscore, or a dollar sign. It cannot be a digit.

- ➔ Identifiers are case-sensitive, meaning that uppercase and lowercase letters are considered different.
- ➔ Java reserves certain keywords (e.g., if, for, class, etc.) and cannot be used as identifiers.
- ➔ Identifiers should be descriptive and meaningful to enhance code readability.

CamelCase convention is commonly used for identifiers with multiple words. The first letter of each word, except the first one, is capitalized. For example: myVariable, calculateSum.

20. List the Operators in Java?

Ans: In Java, there are various types of operators that perform different operations on operands. Here is a list of operators in Java:

1. Arithmetic Operators:
   - Addition (+)
   - Subtraction (-)
   - Multiplication (*)
   - Division (/)
   - Remainder/Modulus (%)
   - Increment (++)
   - Decrement (--)
2. Relational Operators:
   - Equal to (==)
   - Not equal to (!=)
   - Greater than (>)
   - Less than (<)
   - Greater than or equal to (>=)
   - Less than or equal to (<=)
3. Logical Operators:
   - Logical AND (&&)
   - Logical OR (||)
   - Logical NOT (!)
4. Assignment Operators:
   - Simple Assignment (=)
   - Addition Assignment (+=)
   - Subtraction Assignment (-=)
   - Multiplication Assignment (*=)
   - Division Assignment (/=)
   - Remainder Assignment (%=)
5. Bitwise Operators:
   - Bitwise AND (&)
   - Bitwise OR (|)
   - Bitwise XOR (^)
   - Bitwise NOT (~)
   - Left Shift (<<)
   - Right Shift (>>)
   - Unsigned Right Shift (>>>)

21. Explain about increment and decrement operators and give an examples?

Ans: Increment and decrement operators are used to increase or decrease the value of a variable by 1. In Java, there are two types of these operators: the increment operator (++) and the decrement operator (--).

1. **Increment Operator (++): The increment operator increases the value of a variable by 1. It can be used both as a prefix and a postfix operator.**

Prefix Increment: The variable is incremented first, and then its new value is used.

Postfix Increment: The current value of the variable is used, and then it is incremented.

2. **Decrement Operator (--): The decrement operator decreases the value of a variable by 1. Like the increment operator, it can be used as a prefix or a postfix operator.**

Prefix Decrement: The variable is decremented first, and then its new value is used.

Postfix Decrement: The current value of the variable is used, and then it is decremented.