**1. Relation between Initial algorithm and refining algorithm.**

***Ans:***

Initial algorithm: After defining the problem an algorithm is prepared with the major process involving the problem is known as initial algorithm.

Refining algorithm: from the initial algorithm when we prepare a complete set of operation including program execution point is known as refining algorithm.

**2. What is the difference between compiler and interpreter?**

***Ans:***

Compiler: A compiler translates a source program to an executable program. It takes more time and works in application level.

Compiler

Source code Executable

Executable

Input data Output data

Interpreter: An interpreter converts a source program and executes it at the same time. It takes minimum time and works in browser level.

Source code

Interpreter

­ Output data

Input data

**3. What are the differences between flowchart and structural chart?**

***Ans:*** The difference between structured chart and flow chart are as follows:

|  |  |
| --- | --- |
| Structured chart: | Flow chart: |
| It represents the total planning of a program. | Represent the sequence of operation to be performed in several modules. |
| Represents only module and their relationship | It represents a specific module |
| Use only rectangle | Use different types of shapes. |
| It requires far less revision | It requires more revision |
| Easier to understand than flow chart | Difficult to understand than structured chart. |

**4. What is the different between internal and external subroutines?**

|  |  |
| --- | --- |
| **Internal subroutine** | **External subroutine** |
| Part of the same program | Like a different program |
| Calling flow represented by horizontal striped | Calling flow represented by vertical striped |
| Programmer already knows where to find it. | Programmer needs to know where to find it. |
|  |  |

**5. Define cylinder, track and sector.**

***Ans:*** **Cylinder**: The collection of tracks of the same number on a disk that is the tracks that can be read form or written to with a single positioning of the accessing mechanism.

**Track**: The tracks are the thin concentric circular strips of sectors. At least one head is required to read a single track.

**Sector**: A sector is the smallest storage unit that is addressable by a hard drive and information stored by the hard drive is recorded in sectors. Common sector sizes are 512 bytes for hard disk and 2048 bytes for CDs and DVDs but another size such as 128 bytes and 1024 bytes are also used.

**6. What are the advantages of using High-Level Languages?**

**Ans:** High level languages are very similar to nature language such as English so they are very easy to learn and use. For higher level languages programmers needs not to learn about internal structure of the computer. High level language programs require less time and efforts that due the preparation cost of the program. It needs not to write all steps because computer take cares of all small error. Compilers of high level languages automatically catch and point out the errors made by the programmers.

**7. Write down the steps of programming process.**

***Ans:*** These are the following steps of programming process:

1. Defining the problem.
2. Preparing an algorithm.
3. Preparing a program flowchart.
4. Coding the program.
5. Debugging and testing.
6. Documenting.

**8. What do you mean by counter variable?**

***Ans:*** A counter variable is one, which keeps track of the number of times a particular operation has been performed.

**9.What do you mean by debugging and testing?**

***Ans:*** The process of detecting and correcting errors (bugs) in a program continuous until the desired output is obtained.

**10. What do you mean by documenting a program? Write down the benefits of it.**

***Ans:*** Preparing a written record of all the activities associate with the programming process is called documenting.

Benefits of documenting going to be:

1. Any program that is used regularly is almost certain to be changed at sometime.
2. The original programmer sometimes faces difficulty remembering the program.
3. If the original programmer is no longer available it may be virtually impossible to modify of there is no documentation.

**11. What do you mean by desk-checking?**

***Ans:*** Desk-checking is a reviewing process in which a representative sample data is manually processed through an algorithm, flowchart and pseudocode or coded program to locate logical error.

**12. Write down 5 (five) flowchart guidelines.**

***Ans:*** Following are the steps of flowchart guideline:

1. Every program flowchart starts with a single terminal outline and ends with one or more terminal outlines.
2. The descriptive names that identify data items being used and the operations being performed should be used consistently.
3. The words used inside the outlines should be chosen so that they will have meaning for anyone reading the flowchart.
4. The content of a decision outline should consists of the two items being compared separated by a colon.
5. Entering and exiting flow lines should be positioned in the centre of an outline.

**13. Write down the advantage and disadvantage of Modular programming**

***Ans:*** The advantages of modular programming are as follows:

1. In Modular Programming modules are independent. So different programmer can work simultaneously in different part of the same program.
2. It reduces the time.
3. Modules can be radically changed without affecting other module.

The disadvantages of modular programming are:

1. Difficult in determining exactly what constitutes a module.
2. Difficult in the emphasis placed on the planning phase in the programming.
3. Modular programming requires a substantial amount of coordination and standardization.

**14. What do you mean by decision table?**

***Ans:*** It is a tool for planning and documenting processing that involves complex combination of condition. Decision table slows us what is to be done under what condition and what order.

**15. What do you mean by control break?**

***Ans:*** A changed in the value in a control field between consecutive records in file is known as control break.

**16. Write down the advantage and disadvantages of HIPO chart?**

***Ans:***

Advantages:

1. The input and output of each module are clearly identified.
2. We can easily determining what modules are called by one module.

Disadvantages: Documentation for a program gets to be rather bulky.

**17. What is sequential and binary search?**

***Ans:*** **Sequential Search:** It is a method for searching an argument table that examines entries in the order in which they appear in a table starting at the first end.

**Binary search**: is a technique for searching an ordered argument table that is efficient for large tables.

**18. What is top down programming approach?**

**Ans:** Top-down programming approach has evolved as a useful technique in planning a modular program where we first define the main program module that initiates program execution, calls other module to performs specific function and then terminates execution.

**19. What is pseudocode?**

***Ans:*** Pseudocode is a way to represent the instruction that use ordinary English. It is a planning tool of structured program.

**20. What is sentinel value?**

***Ans:*** Sentinel value is a predetermine value that place in a dummy record at the end of the data file. Sentinel value might be a negative number or a string of nines.

do while key field ≠ sentinel value.