Assignment 1: Fundamentals of IT and Programming - Model Answers

Q1. Define Information Technology (IT). Mention its uses.

Information Technology (IT) refers to the use of computers, storage, networking devices, and other infrastructure to create, process, store, secure, and exchange all forms of electronic data.

Uses of IT:

- Communication (Email, Chat, Video Calls)

- Data Management (Databases, Spreadsheets)

- Business Applications (Inventory, Billing)

- Education (Online Learning Platforms)

- Healthcare (Patient records, Diagnosis tools)

Q2. What are the main components of a computer system?

Main components of a computer system include:

1. Hardware - Physical parts like CPU, monitor, keyboard, mouse

2. Software - Programs that run on the computer

3. Users - People who operate the computer

4. Data - Raw information used for processing

5. Procedures - Instructions for using the system

Q3. What is an algorithm? Write an algorithm to add two numbers.

An algorithm is a step-by-step procedure or formula for solving a problem.

Algorithm to add two numbers:

1. Start

2. Input number A

3. Input number B

4. Add A and B -> C = A + B

5. Display result C

6. Stop

Q4. What is a flowchart? Draw a flowchart to subtract two numbers.

A flowchart is a diagram that shows a process or system using symbols such as arrows, rectangles, and ovals.

Flowchart for subtracting two numbers:

[Start] -> [Input A, B] -> [Subtract A - B] -> [Display Result] -> [End]

Q5. Define programming language. Name two types with examples.

A programming language is a formal language used to give instructions to a computer to perform specific tasks.

Types:

1. High-Level Language - Easy to understand

   - Examples: Python, Java, C++

2. Low-Level Language - Closer to machine language

   - Examples: Assembly, Machine code

Q6. What is the difference between Compiler and Interpreter?

Compiler vs Interpreter:

Compiler:

- Translates entire code at once

- Faster execution after compiling

- Example: C, C++

Interpreter:

- Translates code line-by-line

- Slower due to line-by-line checking

- Example: Python, JavaScript