Lecture 1.1: Problem Set

Part 1: Multiple Choice (Single Answer)

1. Which of the following is NOT a hardware component?
a) CPU
b) Operating System
c) Monitor
d) Keyboard
Answer: b) Operating System

2. The CPU speed is measured in:
a) Bytes
b) Megahertz (MHz)
c) Volts
d) Bits per second
Answer: b) Megahertz (MHz)

3. Which component is considered the "brain" of the computer?
a) Memory (RAM)
b) Hard Disk
c) Central Processing Unit (CPU)
d) Power Supply
Answer: c) Central Processing Unit (CPU)

4. A program written in a high-level language is called:
a) Machine code
b) An assembler
c) Source code
d) System software
Answer: c) Source code

5. Which software manages and controls a computer's activities?
a) Word Processor
b) Web Browser
c) Operating System
d) Compiler
Answer: c) Operating System

6. Which of the following is a volatile memory?
a) Hard Disk
b) USB Flash Drive
c) RAM
d) CD-ROM
Answer: c) RAM

7. What is the function of a compiler?
a) To execute the program
b) To manage memory
c) To translate source code into machine code
d) To provide input to the computer
Answer: c) To translate source code into machine code

8. Which language uses binary code for instructions?
a) High-Level Language
b) Assembly Language
c) Machine Language
d) English
Answer: c) Machine Language

Part 2: True or False

1. Software comprises the visible, physical elements of the computer.
• ( ) True
• ( ) False
Answer: False

2. Without an operating system, application programs can run directly on the hardware.
• ( ) True
• ( ) False
Answer: False

3. Storage devices are non-volatile, meaning they retain data even when the power is off.
• ( ) True
• ( ) False
Answer: True

4. An assembler is used to convert high-level language into machine code.
• ( ) True
• ( ) False
Answer: False

5. Input devices are used to display results from the computer.
• ( ) True
• ( ) False
Answer: False

6. The operating system is the first program to load when you turn on your computer.
• ( ) True

• ( ) False
Answer: True

7. A byte typically holds 8 bits.
• ( ) True
• ( ) False
Answer: True

8. High-level languages are written in binary code.
• ( ) True
• ( ) False
Answer: False

Part 3: Definitions

1. Define: Hardware
Answer: The physical parts of a computer.

2. Define: Software
Answer: Instructions for the computer.

3. Define: CPU
Answer: The brain of the computer.

4. Define: Volatile Memory
Answer: Memory that is erased when power is off.

5. Define: Compiler
Answer: A tool that turns code into machine language.

6. Define: Operating System (OS)
Answer: Software that manages the computer.

7. Define: Input Device
Answer: A tool to put data into a computer.

8. Define: Source Code
Answer: Code written by a programmer.

Part 4: Short Answer & Fill-in-the-Blank

1. List three examples of each:

- **Input Devices:** Keyboard, Mouse, Scanner
- **Output Devices:** Monitor, Printer, Speakers
- **Storage Devices:** Hard Drive, USB, SSD

2. Why must programs and data be brought into memory (RAM) before execution?
Answer: The CPU can only use data from RAM.

3. Complete the analogy: Assembler : Assembly Language :: Compiler : _____
Answer: High-Level Language

4. What is the key difference between system software and application software?
Answer: System software runs the computer. Application software helps the user.

5. What does this mean: area = 5 * 5 * 3.1415;
Answer: It calculates the area of a circle.

Part 5: Matching

Match the term with its description.
1. Machine Language - C. Instructions in binary code
2. Application Software - E. Software for user tasks
3. Hardware - B. The physical parts
4. Operating System - A. Manages computer activities
5. Compiler - D. Translates source code

Answers: 1-C, 2-E, 3-B, 4-A, 5-D