Week 1 Assignment 1

Answer the following questions (1 mark)

1) Time taken by a n-bit ripple carry adder is proportional to
   (a) \( O(n) \)
   (b) \( O(\log n) \)
   (c) \( O(n^2 \log n) \)
   (d) \( O(n^2) \)

   **Accepted Answers:**
   (a) \( O(n) \)

2) The carry look ahead operation (*) can be used to reduce the time complexity of addition operation because of which of these properties of the operation
   (a) commutativity
   (b) associativity
   (c) distributivity
   (d) closure

   **Accepted Answers:**
   (b) associativity

3) The depth of a hardware circuit is evaluated using which of the following techniques
   (a) Divide and Conquer
   (b) Depth First Search
   (c) Topological Sorting
   (d) Branch and Bound

   **Accepted Answers:**
   (c) Topological Sorting

4) A Segmentation Fault while generating a user-written program is generated by
   (a) Operating System
   (b) Compiler
   (c) High-Level Language
(d) Interpreter

**Accepted Answers:**

(a) Operating System

5) Size of virtual memory is limited by

- (a) Size of RAM
- (b) Size of External Memory
- (c) Size of the operating system
- (d) Size of the address bus

**Accepted Answers:**

(a) Size of the address bus

6) Task switching is handled by the

- (a) Compiler
- (b) Task
- (c) Operating System
- (d) Interpreter

**Accepted Answers:**

(c) Operating System

7) The C-programming language is a

- High-Level Language
- Middle-level language
- Low level language

**Accepted Answers:**

High-Level Language

8) Functions like printf() in C-programming language transfers the program control to the

- Compiler
- Operating system
- Interpreter
- Hardware

**Accepted Answers:**

Operating system

9) The most important constraint of a real-time system is

- Space
- Memory
- Electricity
- Time

**Accepted Answers:**

Time
### Size of a circuit is

- Area of a circuit
- Width of circuit
- Number of connections
- Number of combinational elements

**Accepted Answers:**

*Number of combinational elements*