

Daffodil International University



Department of Computer Science and Engineering

Course Code: CSE112 Course Title: Computer Fundamentals

Section: 70_M

Semester: Fall-2025

Quiz:03 Set:B

Course Teacher: MHS

Name :

Student ID:

Time: 30 Minutes

[Answer All the following questions]

Full Marks: 15

Q1. A startup wants to build a smart farming system that uses real-time data to manage irrigation. They plan to deploy soil moisture sensors, temperature sensors, and a dashboard to monitor field conditions remotely.

Apply your understanding of IoT components to this scenario. Identify which key components would be involved in the system, and explain how each one contributes to achieving automation in the farming process.

2. You are part of a university project team developing a smart door lock system. The lock uses a keypad for input, a motor to unlock the door, and a microcontroller to process inputs and control the motor.

Analyze the role of the embedded system in this project. Describe the components of the embedded system (microcontroller, memory, I/O ports, etc.) and explain how they interact to complete the door unlocking process.

Q3. A hospital introduces a mobile robot to deliver medicines to patient rooms. The robot uses infrared sensors to detect obstacles, a microcontroller to make decisions, and wheels powered by motors to move around. **Analyze how the Sense-Think-Act cycle is implemented in this robot.** Break down how the robot senses its environment, makes decisions, and takes actions based on its programming and sensor inputs. [5]