**Embedded System Suggestion: Easy2Learning**

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**Unit 1: Embedded System Design Basics**

**2 Marks Questions:**

1. What is the role of a microcontroller in an embedded system?
2. Mention two applications of embedded systems.
3. Differentiate between embedded software and firmware.
4. What is Embedded C?
5. Define a global variable and a local variable in C programming.
6. What is the purpose of the pinMode() function in Arduino programming?
7. Define an embedded system.
8. What are the components of an embedded system?
9. List any two differences between 8051 and Arduino.

**3 Marks Questions:**

1. Compare the 8051, Arduino, and PIC microcontrollers in terms of their architecture and usage.
2. Explain the key components of an embedded system and their roles.
3. Explain the importance of real-time performance in embedded systems.
4. How does the comparison between 8051, Arduino, and PIC microcontrollers influence their use in various applications?

### Unit 2: Architecture Review of Arduino Uno Board

**2 Marks Questions:**

1. What is the ATmega328 microcontroller used for in Arduino Uno?
2. Name two different types of Arduino boards other than Uno.
3. What is the function of a crystal oscillator in the Arduino board?
4. Briefly explain the difference between Arduino Mega and Arduino Nano.
5. What is the function of the Reset switch on an Arduino board?
6. List two features of the ATmega328 microcontroller.
7. What is the purpose of using relays in Arduino projects?
8. Briefly describe how to connect an LED to an Arduino board.
9. What is a seven-segment display, and where is it used?

**3 Marks Questions:**

1. Explain how the power supply system works on the Arduino Uno board.
2. Describe the architecture of the ATmega328 microcontroller in terms of its memory and input/output management.
3. How are digital and analog signals processed differently in an Arduino board?
4. Explain the difference between digital and analog ports in an Arduino board.
5. Discuss the use of an LED and a relay with the Arduino board.

### Unit 3: Embedded C Programming Simulation Model for Arduino

**2 Marks Questions:**

1. What is Embedded C?
2. Define a global variable and a local variable in C programming.
3. What is the purpose of the pinMode() function in Arduino programming?
4. What is the significance of #define directive in Embedded C?
5. Write a small code snippet to initialize a pin as an output in Arduino.
6. What is the difference between int and float data types in C programming?

**3 Marks Questions:**

1. Write the syntax and explain the working of a for loop in Embedded C.
2. Discuss the use of EEPROM in Arduino programming with an example.
3. Explain how to use the Serial.begin() function in Arduino programming.
4. Describe how to interface an LCD with Arduino and display "Hello World".
5. Explain how switches can be used as inputs in an Arduino-based system.
6. Describe the role of a buzzer in an embedded system project with Arduino.
7. Discuss the use of EEPROM in Arduino programming with an example.