

Embedded C Programming – MCQ (Arduino & ESP32)

Each question includes 4 options (A–D) and the correct answer.

1. Which function is used to initialize serial communication in Arduino?

- A. `serialBegin()`
 - B. `Serial.begin()`
 - C. `beginSerial()`
 - D. `initSerial()`
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2. What is the default baud rate used in `Serial.begin()`?

- A. 2400
 - B. 4800
 - C. 9600
 - D. 115200
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3. What is the role of `setup()` in an Arduino sketch?

- A. Runs every time a pin changes state
 - B. Runs continuously in a loop
 - C. Runs once at the beginning
 - D. Handles interrupts
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4. What data type would you use for storing values between 0 and 255?

- A. `int`
 - B. `char`
 - C. `long`
 - D. `byte`
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5. Which function is used to set a pin as input or output?

- A. `pinMode()`
 - B. `digitalWrite()`
 - C. `setPin()`
 - D. `configurePin()`
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6. What does `digitalWrite(13, HIGH);` do?

- A. Reads pin 13
 - B. Turns off pin 13
 - C. Sets pin 13 to 0V
 - D. Sets pin 13 to 5V
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7. What's the correct way to read an analog pin in Arduino?

- A. `analogRead(5)`
 - B. `digitalRead(A5)`
 - C. `readAnalog(5)`
 - D. `pinRead(5)`
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8. What value range is returned by `analogRead()` on Arduino UNO?

- A. 0–255
 - B. 0–512
 - C. 0–1023
 - D. -255 to 255
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9. Which ESP32 feature is not available in standard Arduino UNO?

- A. PWM
 - B. GPIO
 - C. Wi-Fi
 - D. ADC
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10. What is the purpose of `delay(1000);`?

- A. Pauses for 1 microsecond
 - B. Pauses for 1 second
 - C. Pauses for 1000 seconds
 - D. Restarts the program
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11. What is the default logic level of a digital output pin on reset?

- A. HIGH
 - B. LOW
 - C. Floating
 - D. Depends on the pin
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12. What keyword is used to define a constant variable in C?

- A. fixed
 - B. readonly
 - C. const
 - D. define
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13. How do you comment a single line in Embedded C?

- A. `/* comment */`
 - B. `# comment`
 - C. `// comment`
 - D. `-- comment`
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14. Which of these libraries enables I2C communication in Arduino?

- A. `Wire.h`
 - B. `I2C.h`
 - C. `Serial.h`
 - D. `Bus.h`
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15. What command would you use to include a custom header file?

- A. `include "header.h"`
 - B. `#include header.h`
 - C. `#include "header.h"`
 - D. `import header.h`
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16. In ESP32, which function connects to Wi-Fi?

- A. `WiFi.start()`
- B. `WiFi.connect()`

- C. `WiFi.begin()`
 - D. `WiFi.init()`
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17. Which data type is best for storing `true/false` in C?

- A. `int`
 - B. `bool`
 - C. `char`
 - D. `binary`
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18. What keyword defines an interrupt service routine (ISR)?

- A. `interrupt()`
 - B. `ISR()`
 - C. `handleInterrupt()`
 - D. `voidInterrupt()`
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19. What is the use of `analogWrite()` in Arduino?

- A. Read analog value
 - B. Set digital pin HIGH or LOW
 - C. Output PWM signal
 - D. Write binary to EEPROM
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20. What does `volatile` keyword indicate for a variable?

- A. It resets automatically
 - B. It can change outside program flow (e.g., ISR)
 - C. It never resets
 - D. It stores large data
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