**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()

**2. What is the default baud rate used in Serial.begin()?**

A. 2400  
B. 4800  
C. 9600  
D. 115200

**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

**4. What data type would you use for storing values between 0 and 255?**

A. int  
B. char  
C. long  
D. byte

**5. Which function is used to set a pin as input or output?**

A. pinMode()  
B. digitalWrite()  
C. setPin()  
D. configurePin()

**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

**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)

**8. What value range is returned by analogRead() on Arduino UNO?**

A. 0–255  
B. 0–512  
C. 0–1023  
D. -255 to 255

**9. Which ESP32 feature is not available in standard Arduino UNO?**

A. PWM  
B. GPIO  
C. Wi-Fi  
D. ADC

**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

**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

**12. What keyword is used to define a constant variable in C?**

A. fixed  
B. readonly  
C. const  
D. define

**13. How do you comment a single line in Embedded C?**

A. /\* comment \*/  
B. # comment  
C. // comment  
D. -- comment

**14. Which of these libraries enables I2C communication in Arduino?**

A. Wire.h  
B. I2C.h  
C. Serial.h  
D. Bus.h

**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

**16. In ESP32, which function connects to Wi-Fi?**

A. WiFi.start()  
B. WiFi.connect()  
C. WiFi.begin()  
D. WiFi.init()

**17. Which data type is best for storing true/false in C?**

A. int  
B. bool  
C. char  
D. binary

**18. What keyword defines an interrupt service routine (ISR)?**

A. interrupt()  
B. ISR()  
C. handleInterrupt()  
D. voidInterrupt()

**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

**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