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Question Paper Code: U8461

B.E. / B.Tech. DEGREE EXAMINATION, APRIL 2024

One credit Course

Electronics and communication Engineering

21UEC861- PIC EMBEDDED PROGRAMMING

(Regulations 2021)

(Common to All Branches)

Duration: 1.30 Hours

Maximum: 30 Marks

Answer ALL Questions

PART A - (30 x 1 = 30 Marks)

1. Which of the following registers in a microprocessor is used to hold the memory address of the next instruction to be executed? CO1- U
(a) Accumulator (b) Instruction Register (c) Program Counter (d) Stack Pointer
2. Which of the following memories is used for storing data temporarily during program execution in PIC microcontrollers? CO1- U
(a) RAM (b) ROM (c) EEPROM (d) Flash Memory
3. Which of the following sensors is used to detect motion in a room? CO1- U
(a) IR Sensor (b) PIR Sensor (c) Temperature Sensor (d) Light Sensor
4. Which of the following microcontrollers has a 20 MHz clock frequency? CO1- U
(a) PIC16F877A (b) PIC16F84 (c) PIC16C84 (d) PIC18F452
5. Which of the following sensors is used to detect infrared radiation in electronic circuits? CO1- U
(a) IR Sensor (b) PIR Sensor (c) Temperature Sensor (d) Light Sensor
6. Which of the following registers stores the result of an arithmetic or logical operation in a microprocessor? CO1- U
(a) Program Counter (b) Stack Pointer (c) Status Register (d) Accumulator

7. Which of the following is a type of input device commonly used in embedded systems for detecting touch on a screen? CO1- U
- (a) Buttons (b) Joysticks (c) Touchscreens (d) All of the above
8. Which type of memory is used to store temporary data in a microcontroller? CO1- U
- (a) RAM (b) ROM (c) EPROM (d) EEPROM
9. What is the function of an I/O expander? CO1- U
- (a) It increases the number of I/O ports available to a microcontroller
- (b) It increases the clock speed of a microcontroller
- (c) It stores program instructions
- (d) It performs analog-to-digital conversion
10. What is the function of a relay in an embedded system? CO1- U
- (a) It is used to switch high power devices
- (b) It is used to measure the frequency of a signal
- (c) It stores program instructions
- (d) It performs analog-to-digital conversion
11. What is the purpose of the Analog-to-Digital Converter (ADC) in a microcontroller? CO1- U
- (a) To convert analog signals to digital signals
- (b) To convert digital signals to analog signals
- (c) To store program instructions
- (d) To provide I/O expansion
12. Which of the following is not a type of display commonly used in embedded systems? CO1- U
- (a) OLED display (b) LCD display (c) CRT display (d) LED display
13. Which of the following is a type of output device commonly used in embedded systems? CO1- U
- (a) ADC (b) DAC (c) IR sensor (d) MEMS sensor

14. Which of the following timers is commonly used in microcontrollers for generating interrupts? CO1- U
- (a) Timer0 (b) Timer1 (c) Timer2 (d) Timer3
15. Which of the following devices is commonly used in embedded systems for controlling high-power loads such as motors? CO1- U
- (a) Transistor (b) Op-amp (c) Relay (d) Capacitor
16. Which microcontroller has a built-in USART(Universal Synchronous/Asynchronous Receiver/Transmitter)? CO1- U
- ((a) PIC16F84 (b) PIC16C84 (c) PIC16F877A (d) PIC16F628A
17. Which of the following is a type of motor driver commonly used in embedded systems for controlling the speed and direction of a DC motor? CO1- U
- (a) L293D (b) ULN2003 (c) TB6612FNG (d) DRV8825
18. Which of the following microcontrollers has a built-in hardware SPI module? CO1- U
- (a) PIC16F84 (b) PIC16C84 (c) PIC16F877A (d) PIC18F452
19. Which of the following is a type of peripheral commonly used in embedded systems to generate precise time delays? CO1- U
- (a) Timer (b) Counter (c) ADC (d) DAC
20. Which of the following is a type of communication protocol commonly used in embedded systems for sending and receiving data between two devices? CO1- U
- (a) SPI (b) I2C (c) UART (d) USB
21. Which of the following is a type of input device commonly used in embedded systems for capturing user input? CO1- U
- (a) Buttons (b) Joysticks (c) Touchscreens (d) All of the above
22. Which of the following is a type of memory that can be erased and reprogrammed in a microcontroller, but requires UV light for erasing? CO1- U
- (a) ROM (b) RAM (c) EPROM (d) Flash

23. Which of the following is a type of sensor commonly used in embedded systems for detecting motion? CO1- U
(a) IR Sensor (b) PIR Sensor (c) Temperature Sensor (d) Light Sensor
24. Which of the following is a type of display commonly used in embedded systems for displaying text and numbers? CO1- U
(a) LED display (b) LCD display (c) OLED display (d) E-paper display
25. Which of the following microcontrollers has a built-in hardware SPI module and 10-bit PWM module? CO1- U
(a) PIC16F877A (b) PIC16F84 (c) PIC16C84 (d) PIC18F452
26. Which of the following timers is used in PIC16F877A microcontroller? CO1- U
(a) Timer0 (b) Timer1 (c) Timer2 (d) Timer3
27. Which of the following microcontrollers has the largest number of I/O ports? CO1- U
(a) PIC16F877A (b) PIC16F84 (c) PIC16C84 (d) PIC18F452
28. Which of the following sensors is used to measure temperature in electronic circuits? CO1- U
(a) IR Sensor (b) PIR Sensor (c) Temperature Sensor (d) Light Sensor
29. Which of the following sensors is used to detect infrared radiation in electronic circuits? CO1- U
(a) IR Sensor (b) PIR Sensor (c) Temperature Sensor (d) Light Sensor
30. Which of the following is NOT a function of a timer module in a microcontroller? CO1- U
(a) Generating interrupts (b) Counting external events
(c) Measuring elapsed time (d) Performing analog-to-digital conversion