


Name:			
Enrolment No:			
UNIVERSITY OF PETROLEUM AND ENERGY STUDIES End Semester Examination, December 2022			
Course: Microprocessor Based Control System Semester: V Program: B.Tech ADE Course Code: ECEG3043		Time : 03 hrs. Max. Marks: 100	
Instructions:			
SECTION A (5Qx4M=20Marks)			
S. No.		Marks	CO
Q 1	List the difference between the microprocessor and microcontroller.	4	CO1
Q 2	List the selection criterion of choosing the microcontroller.	4	CO1
Q 3	List the function of address bus, data bus and control bus.	4	CO2
Q 4	Define the different types of memory in microcontroller.	4	CO2
Q 5	List the difference between the field control	4	CO2
SECTION B (4Qx10M= 40 Marks)			
Q 6	Explain the pin description of the 8051 microcontroller.	10	CO3
Q 7	Discuss the steps involved in enabling the interrupt.	10	CO3
Q 8	A temperature sensor is connected to the P1.3 pin, and a compressor is connected to P1.6. Write an 8051 C program to monitor temperature sensor, and when it above the set temperature, compressor start running.	10	CO3
Q 9	Write an 8051 C program to toggle only bit P3.2 continuously without disturbing the rest of the bits of P3. OR LEDs are connected to bits P1 and P2. Write an 8051 C program that shows the count from 0 to AAH on the LEDs.	10	CO4
SECTION-C (2Qx20M=40 Marks)			
Q 10	Design the circuit for the bidirectional motor control using an L293 motor driver. Add a switch to pin P2.6. Write a program to monitor the status of SW and perform the following:	20	CO4

	(a) If SW=0, the DC motor moves clockwise (b) If SW=1 , the DC motor moves counterclockwise		
Q 11	<p>Design a DC Motor connection using a Darlington transistor. A switch SW is connected to pin 3.2 which is the INT0 pin. Write a program</p> <p>(a) Normally the motor runs with a 33% duty cycle (b) When INT0 is activated, the motor runs with 10% duty cycle for a short duration.</p> <p style="text-align: center;">OR</p> <p>Design a DC motor connection using a MOSFET transistor. A switch is connected to pin 2.5. Write a c program to monitor the status of W and perform the following:</p> <p>(a) If SW=0, the DC motor moves clockwise (b) If SW=1, the DC motor moves counterclockwise.</p>	20	CO4