



SCHOOL OF COMPUTER SCIENCE AND ENGINEERING
&
SCHOOL OF COMPUTER SCIENCE ENGINEERING AND INFORMATION SYSTEMS
CONTINUOUS ASSESSMENT TEST - II
FALL SEMESTER 2025-2026

Programme Name & Branch : B. Tech
 Course Code and Course Name : BECE204L - Microprocessors and Microcontrollers
 Faculty Name(s) : Dr. Gerardine Immaculate Mary, Dr. Shanmugasundaram M, and Dr. Rajesh N
 Class Number(s) : VL2025260103664 / 3666 / 3867
 Date of Examination : 10/10/25
 Exam Duration : 90 minutes Maximum Marks: 50

General instruction(s):

- CO4 - Deploy the implementation of various peripherals such as general purpose input/output, timers, serial communication, LCD, keypad, and ADC with 8051 microcontroller.

Answer ALL Questions

Q. No	Question	M	CO	BL
1.	(a). Draw the format of TMOD register of 8051 and also calculate the value to be assigned to configure the following: (i). Timer 0 in mode 1 and Counter 1 in mode 2 (ii). Counter 0 in mode 2 and Timer in mode 1	5	CO4	2
	(b). Draw the format of IE register of 8051 and also calculate the value to be assigned to enable the following interrupts in an application: (i). Timer 0, external interrupt 1 and serial communication Reception (ii). Counter 1, and external interrupt 0.	5	CO4	2
2.	Develop an 8051 Assembly Language Program (ALP) to perform the following task: Assume a sensor connected to port pin P1.0 provides a HIGH (1) or LOW (0). If P1.0 is high, generate a 1 KHz wave of 25 % duty cycle on P2.0 using Timer 0; else generate a waveform of 50% duty cycle of 1 KHz on P2.1 using Timer 1.	10	CO4	3
3.	Write an 8051 ALP to add two numbers received from Port P0 and P1. If carry is generated then transfer a message "CARRY GENERATED" serially at 19200 baud rate. If no carry is generated, receive a message serially at 9600 baud rate and transfer to P2. Do it repeatedly.	10	CO4	3
4.	Assume a sensor is connected to INT0 of 8051 microcontroller. When the sensor generates momentarily high-to-low signal, transfer data from port P0 to P1 and then send a low-to-high signal at P2.1, simultaneously generating a delay of 100 microseconds at P2.2 using timer 0. Write an ALP for the above scenario.	10	CO4	3
5.	Display each character in the string "sense" with a time delay of 2 ms between each character on a 7-segment LED common cathode display. Assume port pin P2.0-P2.6 of 8051 is connected to LED segments a to g respectively.	10	CO4	3