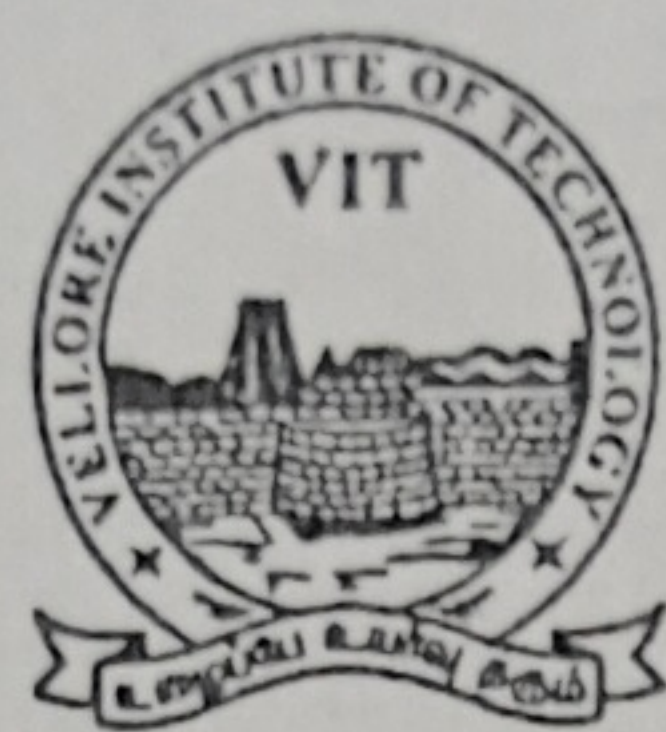




SCHOOL OF ELECTRICAL ENGINEERING
FALL SEMESTER 2026-2027
CONTINUOUS ASSESSMENT TEST - II

Programme Name & Branch : B.Tech & BEL
 Course Code and Course Name : BEEE309L Microprocessors and Microcontrollers
 Faculty Name(s) : Dr.D.Rama Prabha
 Class Number(s) : VL2026270101257
 Date of Examination and Time : 30/09/2026 and 8.30 am to 10 am
 Exam Duration : 90 minutes Maximum Marks: 50

General instruction(s):

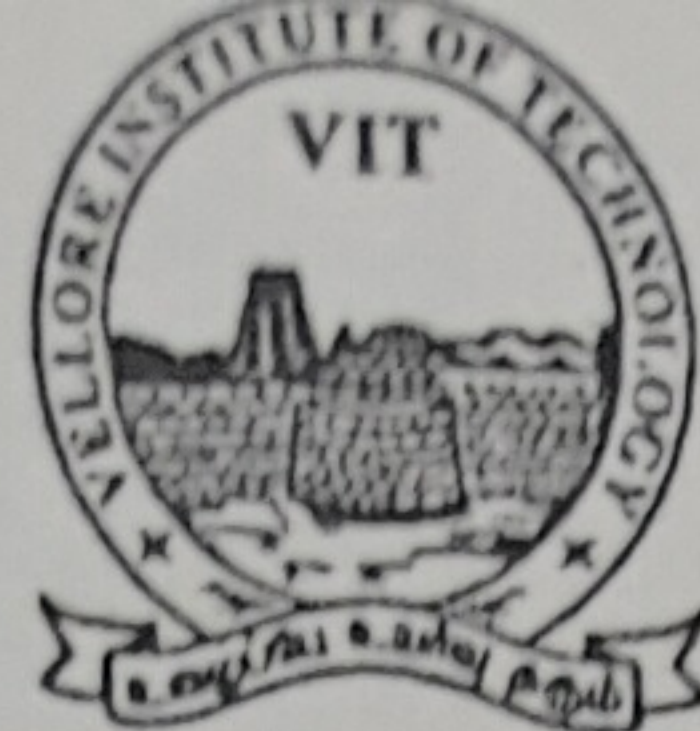
- Answer All Questions
- Rough work should not be done on question paper. It will be treated as malpractice.
- M - Max mark; CO – Course Outcome; BL – Blooms Taxonomy Level (1 – Remember, 2 – Understand, 3 – Apply, 4 – Analyse, 5 – Evaluate, 6 – Create)

Course Outcomes Statements:

CO. 2: Comprehend and develop programs for various blocks of 8051

CO. 3: Design and interface microcontroller based embedded systems.

Q. No	Question	M	CO	BL
1.	If crystal used for 8051 microcontroller is of 10MHz then determine the time for setting the timer overflow flag for the following conditions : i. Timer mode – 0 if THX starts of 07H ii. Timer mode – 1 if THX starts at 00H and TLX starts at 2FH iii. Timer mode – 2 if count in THX is 73H.	10	2	3
2.	Write a program using interrupts to do the following i. Receive data serially and send it to P2 ii. Generate a squarewave of 7kHz frequency on P0.0 whenever INT0 is enabled. Use Timer1 to generate squarewave. XTAL=30MHz. Use baudrate of 9600.	10	3	3
3.	Write an assembly language program to print '8951EACH' using 7 segment display with 4ms delay between each numbers and letters in the word. To generate the delay, use timer 0 in mode 1. Assume XTAL is 11.0592 MHz. Also draw the hardware interfacing diagram with 8051 microcontroller.	10	3	3



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4.	a) Calculate the delay generated by the timer by executing the following program. Assume XTAL = 40 MHz. <pre> MOV R2, #10H MOV R1, #0FFH MOV TMOD, #10H L2: MOV TH1, #23H MOV TL1, #45H SETB TR1 CPL P1.0 L: JNB TF1, L CLR TR1 CLR TF1 DJNZ R1, L2 DJNZ R2, L2 END </pre> b) Assume all interrupts in 8051 are enabled and give the priority of the interrupts if the following instructions are executed individually. i. MOV IP, #16H ii. MOV IP, #12H	6	3	2
5.	Write an assembly language program to transfer the word "ENERGY" serially and continuously at a baud rate of 4800. Assume XTAL=20MHz.	10	3	2