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VIT
Vellore Institute of Technology
Chennai

Reg. Number

Continuous Assessment Test(CAT) – I - AUG 2024

Programme	:	B.Tech (BCE/BPS/BAI/BRS)	Semester	:	FS 2024-25
Course Code & Course Title	:	BECE204L; Microprocessors and Microcontrollers	Class Number	:	CH2024250100340, CH2024250100342, CH2024250100344, CH2024250100346, CH2024250100348, CH2024250100350, CH2024250100352, CH2024250100354
Faculty	:	Dr. N.Subhashini, Dr. Rahul Narasimhan, Dr. Manoj Kumar R, Dr. Balakrishnan R, Dr. Saravana Kumar R, Dr. Karthikeyan P R, Dr. Idayachandran G, Dr Vydeki D	Slot	:	D2+TD2
Duration	:	90 Minutes	Max. Mark		50

General Instructions: < Use this space to provide additional information such as graph sheet, data book etc.>

- Write only your registration number on the question paper in the box provided and do not write other information.
- Use statistical tables supplied from the exam cell as necessary
- Use graph sheets supplied from the exam cell as necessary
- Only non-programmable calculator without storage is permitted

Answer all questions

Q. No	Sub Sec.	Description	Marks	Blooms Taxonomy Level
1.		For the assembly language program given below, find the register content and Flag register value after executing each line of the program.	10	L3

Program	Register Content	CY	P
ORG 0000H SETB PSW.7			
MOV A,#45			
MOV B,#12H			
MUL AB			
MOV B,#10			
DIV AB			
MOV A,#-100			
ADD A,#-50			
MOV A,#120			
ADD A, #30 END			

2.		(a). Write an 8051 ALP to count the number of 1s and 0s in a given 8 bit number. Store the number of 0s in R2 and number of 1s in R3. (b). Write an 8051 assembly language program to compare the value in register A with a constant value 25H . If the value in A is greater than 25H, turn on an LED connected to port P1.0; otherwise, turn it off.	10	L4
3.		Explain in detail the architecture of 8051 with neat diagram and explain how the instruction is fetched, decoded and executed.	10	L1
4.		A switch (SW) is connected to pin P1.2. Write an 8051 program to monitor the switch and generate a square waveform on pin P2.3 based on the following conditions (i) when SW=0, generates 2kHz on P2.3 (ii) When SW=1, generates 50kHz on P2.3. Use Timer 0 in mode 1 for both conditions and assume oscillator frequency to be 11.059MHz.	10	L4
5.		Write a program for the 8051 to receive bytes of data serially, and put them in P2, set the baud rate at 1200bps, 8-bit data, and 1 stop bit.	5	L3
6.		Write a program to copy the value 33H into RAM memory location 40H using (a) immediate addressing mode, (b) direct addressing mode, (c) register addressing mode, (d) register indirect addressing mode, and (e) indexed addressing mode.	5	L3

**********All the best **********