

--	--	--	--	--	--	--	--

B.Tech. Degree V Semester Regular/Supplementary Examination January 2023

CS 19-202-0505 ADVANCED MICROPROCESSORS AND MICROCONTROLLERS (2019 Scheme)

Time: 3 Hours

Maximum Marks: 60

Course Outcomes

On successful completion of the course, the students will be able to:

CO1: Familiarize 32 bit, 64 bit and multi core architectures.

CO2: Compare the features of various microprocessors.

CO3: Learn the architecture and programming with 8051 microcontroller.

CO4: Explain the basic architecture and features of PIC microcontrollers.

CO5: Develop microcontroller programs.

CO6: Familiarize basics of interfacing.

Bloom's Taxonomy Levels (BL): L1 – Remember, L2 – Understand, L3 – Apply, L4 –Analyze,

L5 – Evaluate, L6 – Create

PO – Programme Outcome

PART A(Answer **ALL** questions)

	(8 × 3 = 24)	Marks	BL	CO	PO
I. (a) Compare the features of 80486 over 80386.	3	L3	2	1,2,3,4,6,7,9	
(b) With a block diagram explain the features of Pentium Processor.	3	L2	1	1,2,3,9	
(c) Explain various Operand Addressing methods in 64 bit architecture.	3	L2	1	1,2,3,9	
(d) Explain the segmented and real address mode memory management models.	3	L2	1	1,2,3,9	
(e) Indicate the addressing modes of the following instructions: (i) MOV R1,B (ii) MOV A, #25H (iii) MOV A, 55H (iv) MOV A,@R0 (v) MOVC A, @A+DPTR (vi) MOV 0FH, A	3	L2	3	1,2,3,9	
(f) Write a program to generate a square wave on pin P2.1 of 8051 microcontroller using timer 0 in mode II.	3	L6	5	2,3	
(g) Differentiate between the following instructions: (i) MOVF and MOVWF (ii) BTFSS and BTFSC	3	L3	4	1,2,3,9	
(h) Briefly explain the control bits of the status register of PIC 16F84A.	3	L2	4	1,2,3,9	

PART B

(4 × 12 = 48)

II.	How the virtual address is converted to physical address? Explain the memory addressing in protected mode of 80386.	12	L1	1	1,2,3,9
OR					
III.	Draw and describe the internal Architecture of 80386 microprocessor.	12	L1	1	1,2,3,9

(P.T.O.)

BTS-V(R/S)-01-23-1388

		Marks	BL	CO	PO
IV.	(a) List out the various power reductions techniques while designing a new system. Also explain the methods for effectively handling the power management while keeping performance high.	6	L3	1	1,2,3,9
	(b) State the major issues in multi core processing.	6	L2	1	1,2,3,9
OR					
V.	Explain Basic Program execution environment for 64 bit architecture.	12	L1	1	1,2,3,9
VI.	Draw and describe the internal Architecture of 8051 microcontroller. Explain each of the functional units in detail.	12	L1	3	1,2,3,9
OR					
VII.	(a) Explain the pin descriptions for an LCD display. Also with a neat diagram explain how an LCD module can be connected to the pins of 8051.	6	L2	6	1
	(b) Write a program to display "Hello world" on the LCD monitor.	6	L3	5	2,3
VIII.	List out the Byte oriented instructions of PIC 16F84A. Give a brief description to each of them.	12	L3	4	1,2,3,9
OR					
IX.	(a) Explain the Option register of PIC 16F84A.	6	L2	4	1,2,3,9
	(b) What are the Special Function registers associated with the Data EEPROM memory of PIC 16F84A. Explain them in detail.	6	L1	4	1,2,3,9

Bloom's Taxonomy Levels

L1 - 45%, L2 - 20%, L3 - 17.5%, L4 - 7.5%, L5 - 2.5%, L6 - 7.5%

