18ELP11

PSG COLLEGE OF ARTS & SCIENCE (AUTONOMOUS)

MSc DEGREE EXAMINATION MAY 2022

(Second Semester)

Branch - APPLIED ELECTRONICS

16 - BIT MICROCONTROLLER

	10	- D11 W1.	ICRUCUNI	KULLEK		
Ti	me: Three Hours		Maximum: 50 Marks			
		SECT.	ION-A (5 M	<u>arks)</u>		
			er ALL ques			
	ALL	questions	carry EQUA	L marks	$(5 \times 1 = 5)$	
1.	How many cycles are used (i) 3 (ii) 4	l by MSP	430, when re (iii) 5		is executed? ds on the conditions	
2.	Timer A has					
	(i) RTC module in it			(ii) Compare/ capture channel		
	(iii) Communication chan	nel		(iv) Conve	erter channel	
_		*.				
3.	ADC10 and ADC12 are	·	-			
	(i) The converters(ii) SAR modules available in the MSP430					
	(iii) Sigma delta modules available in the MSP430					
	(iv) Comparator modules available in the MSP430					
4.	The rate gives the frequency at which the bits are transmitted on the line.					
	(i) bit rate			(ii) packet rate		
	(iii) baud rate			(iv) data ra	nte	
5.	There are how many MSP	430's low	nower mode	es available in	the chip?	
	(i) two (ii) three		(iii) four	(iv) five		
			, ,	, ,	·	
	•		ON - B (15 M		•	
	ATT		er ALL quest		(5 + 2 - 15)	
	ALI	question	s carry EQU.	AL Marks	$(5 \times 3 = 15)$	
6	a. Discuss about the Memo	ry Structu	re.			
	•	(OR))			
	b. Explain the interrupts in	MSP430.				
7	a. Elucidate the Crystal osc	illators.				
			OR)		•	
	b. Write the Usage of clock					
8	a. Explain the Interruptible					
	(OR)					
	b. What is Hardware Multip	pliers?				
9	a. What is USI?				•	
	•	(C	OR)			
	b. Elucidate the SPI with th	e USI.		,		
				•		

10 a. List out the Flash Memory Usage.

b. Write the Low Power Deign.

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SECTION -C (30 Marks)

Answer ALL questions
ALL questions carry EQUAL Marks

 $(5 \times 6 = 30)$

11 a Draw the Pin-out diagram of MSP430 and explain it.

(OR

b. List out the CPU Features.

12 a. Enumerate the Watchdog Timer.

(OR)

b. Explain the Timer B.

13 a. Describe the LCD Driver.

(OR)

b. Explain the Power supplies and Reset.

14 a. Write short notes on I²C Bus.

(OR)

b. Discuss about the Asynchronous Serial Communication.

15 a. Explain the Control Registers.

(OR)

b. What is Low Power Modes? Explain it.

Z-Z-Z END