Reg. No.:

Name :

VIT®

Vellore Institute of Technology

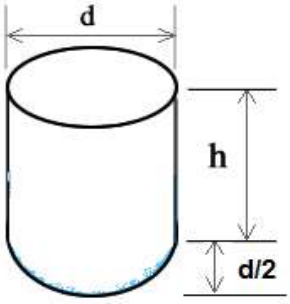
(Deemed to be University under section 3 of UGC Act, 1956)

Model QP

Programme	:	**B.Tech(Computer Science and Engineering)**	Semester	:	
Course	:	**Microprocessor and Interfacing**	Code	:	**CSE2006**
Faculty	:		Slot		
Time	:	**3 Hours**	Max. Marks	:	**100**
			Class Nbr		

Answer ALL Questions

Q.No.	Sub. Sec.	Question Description	Marks
1.	a.	Explain the function of the following signals of 8086 (i) $\overline{\text{LOCK}}$ (ii) $\overline{\text{TEST}}$ (iii) MN/$\overline{\text{MX}}$ (iv) $\overline{\text{BHE}}$ (v) READY (vi) M/$\overline{\text{IO}}$	**6**
	b.	State whether the following instructions are permitted or not and comment on them (i) MOV AX, DL (ii) DIV BL (iii) MOV [SI], [DI] (iv) MOV AX, [SI] (v) MOV 55H, AL (vi) ADD 5779H, AX (vii) ADD AX, 5779H (viii) AND DS, ES	**4**
2.		Write an 8086 ALP with necessary flow chart to calculate squares of BCD numbers from 0 to 9 and store them sequentially from 4000H offset onwards in the current data segment. The numbers and their squares are in the BCD format. Use a subroutine for the calculation of the square of a number	**10**
3.		State different techniques to pass input data/parameter to procedures in assembly language program and illustrate the same with examples.	**10**
4.		Write an 8086 ALP to create a file called DATA and store in it 100 bytes from memory block starting at 2000:2000, if either an interrupt appears at INTR pin with Type 0AH or an instruction equivalent to the above interrupt is executed. Also draw necessary flow chart.	**10**
5.		It is required to interface two chips of 32K X 8 ROM and four chips of 32K X 8 RAM with 8086 according to the following map ROM 1 and ROM 2 F0000H - FFFFFH, RAM 1 and RAM 2 D0000H - DFFFFH RAM 3 and RAM 4 E0000H - EFFFFH Show the implementation of this memory system.	**10**
6		Design a programmable timer using 8253 and 8086. Interface 8253 at an address 0050H for counter 0 and write the following ALPs. The 8086 and 8253 run at 6 MHz and 2 MHz respectively. (i) To generate a square wave of period 5 ms (ii) To interrupt the processor after 10 ms	**10**
7.		Interface a typical 8-bit DAC with 8086 through an 8255 port and write an 8086 ALP to generate a triangular waveform of period 10ms. The CPU runs at 5 MHz clock	**10**

		frequency. Draw proper interface circuit.	
8.		Write an 8087 assembly language program that determine the volume of the given container with diameter "d=5cm" and height "h=3.5cm". Illustrate the outcome of result in single precision format and write the expected output in Hex format.  	**10**
9.		Write an 8087 program to verify the equation $12\sin^2\theta + \cos\theta = 6$. Copy the control word in AX register and also analyse the impact on conditional codes.	**10**
10.	a.	Write a note with neat schematic on the use of Arduino board for temperature sensing application	**5**
	b	Write a note on contemporary processor technologies and their applications (From Guest Lecture)	**5**
		Total Marks	**[100]**

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