SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR
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QUESTION BANK (DESCRIPTIVE)

Subject with Code: Microprocessors and Microcontrollers (19EC0421)
Year & Sem: II-B.Tech & I-Sem

Course & Branch: B.Tech - CSE

Regulation: R19

UNIT –I
MICROPROCESSORS, MICROCOMPUTERS AND ASSEMBLY LANGUAGE

1	a) Define microprocessor. Explain the brief history of evolution of µP.	[L1][CO1]	**[6M]**
	b) Draw the block diagram of microcomputer and explain function of each block.	[L2][CO1]	**[6M]**
2	Define instruction and explain different type's instructions supported by µP.	[L1][CO1]	**[12M]**
3	a) What is the need of memory? And classify different types of memory.	[L1][CO1]	**[6M]**
	b) Compare RAM and ROM memories.	[L1][CO1]	**[6M]**
4	With a neat sketch explain the operation of Microprocessor Controlled Temperature System (MCTS)	[L1][CO1]	**[12M]**
5	a) Write short notes on input devices.	[L1][CO1]	**[4M]**
	b) Briefly explain different computer languages.	[L1][CO1]	**[8M]**
6	a) Write short notes on output devices.	[L1][CO1]	**[6M]**
	b) Compare static RAM and Dynamic RAM	[L1][CO1]	**[6M]**
7	With a neat sketch explain any example of a microcomputer system.	[L1][CO1]	**[12M]**
8	Explain how computers are classified from large computers to single chip microcontrollers.	[L1][CO1]	**[12M]**
9	a) Differentiate between µP & µC.	[L1][CO1]	**[7M]**
	b) Explain the terms i) SSI ii) MSI iii) LSI iv) VLSI v) ULSI	[L1][CO1]	**[5M]**
10	a) Draw and explain the basic architecture of a microprocessor.	[L1][CO1]	**[8M]**
	b) Define theterms: i) BIT, ii) NIBBLE, iii) BYTE & iv)WORD	[L1][CO1]	**[4M]**

UNIT –II
8085 MICROPROCESSOR ARCHITECTURE

1	a)List out the important features (any 12) of 8085 microprocessor. b)Sketch neat block diagram of 8085 microprocessor.	[L2][CO2] [L1][CO1]	**[6M]** **[6M]**
2	a) Explain the requirement of a program counter, stack pointer & ALU in 8085μP. b) Draw and define the flags in 8085μp.	[L1][CO1] [L2][CO2]	**[6M]** **[6M]**
3	a) Draw the pin diagram of 8085 μP. b) Define the following pins: i) READY ii) ALE iii) RESET OUT iv) HOLD & HLDA.	[L2][CO2] [L1][CO1]	**[7M]** **[5M]**
4	a) Explain briefly the control & status signals in 8085μP. b)Define and explain the different types of interrupts available in 8085 μP.	[L2][CO2] [L2][CO2]	**[6M]** **[6M]**
5	Explain in detail how a data flow from memory to Microprocessor Unit.	[L2][CO2]	**[12M]**
6	a) Explain the concept of De-multiplexing the Bus AD7-AD0. b) Classify the register set in 8085μP.	[L2][CO2] [L2][CO2]	**[8M]** **[4M]**
7	Explain the following instructions of 8085 microprocessor with an example. a) Datatransfer instructions b) Logical instructions.	[L2][CO2]	**[6+6M]**
8	Explain the following instructions of 8085 microprocessor with an example. a) Arithmetic instructions b) Stack control instructions.	[L2][CO2]	**[6+6M]**
9	a) Define instruction. b) Explain the instruction, data formats & data storage in 8085 μP.	[L1][CO2] [L2][CO2]	**[2M]** **[10M]**
10	a) Describe how timing and control signals are generated in 8085 μP. b) Explain what operation will take place when the following instructions are executed**:** i) RAL ii) RLC iii) DAD	[L1][CO2] [L1][CO2]	**[6M]** **[6M]**

UNIT –III
THE 8051 ARCHITECTURE

1	With the help of neat diagrams, Describe the differences between microprocessors	[L4][CO3]	**[12M]**

	and microcontrollers.		
2	a) List the features of 8051 microcontroller.	[L1][CO3]	**[4M]**
	b) Mention the applications of microcontrollers in everyday life.	[L4][CO3]	**[8M]**
3	With the help of a neat block diagram, Explain the internal architecture of 8051 microcontroller in detail.	[L2][CO3]	**[12M]**
4	a) Define register. Mention the need of registers in μP or μC.	[L2][CO3]	**[5M]**
	b) Draw the flag register of 8051 μC and describe the functionality of each flag in detail	[L2][CO3]	**[7M]**
5	Mention the various registers present in 8051 μC and explain their functionality indetail	[L2][CO3]	**[12M]**
6	Draw the pin diagram of 8051 μC and describe the functionality of each pin indetail.	[L2][CO3]	**[12M]**
7	a) Mention the importance of I/O port in a μP or μC.	[L4][CO3]	**[2M]**
	b) Describe the functionality of I/O ports present in 8051 μC.	[L4][CO3]	**[10M]**
8	a) Explain the importance of memory in a μPor μC.	[L2][CO3]	**[2M]**
	b) Describe how the memory is organised in 8051 μC in detail.	[L4][CO3]	**[10M]**
9	a) Define counter. Mention the applications of counter	[L2][CO3]	**[3M]**
	b) Describe the operation of timers present in 8051μC.	[L2][CO3]	**[9M]**
10	a) Compare serial communication and parallel communication.	[L5][CO3]	**[3M]**
	b) Explain how the 8051 μC transfers the data using serial port.	[L2][CO3]	**[9M]**

UNIT –IV
PROGRAMMING THE 8051

1	a) Write a short note on assembly language programming.	[L1][CO4]	**[3M]**
	b) Explain the moving data instructions of 8051 μC with an example.	[L2][CO4]	**[9M]**
2	a) Define addressing mode.	[L1][CO4]	**[2M]**
	b) List various addressing modes of 8051 microcontroller and explain them with	[L4][CO4]	**[10M]**

	an example each.		
3	a) Mention various logical operations performed in assembly language.	[L2][CO4]	**[2M]**
	b) Explain the logical Instructions of 8051 µC with an example.	[L2][CO4]	**[10M]**
4	Explain the following operators of 8051 µC with an example. (i) Bit level (ii) Byte level	[L2][CO4]	**[12M]**
5	a) Mention the difference between Jump and Call operations.	[L1][CO4]	**[2M]**
	b) Explain Jump and Call instructions of 8051 µC with an example.	[L2][CO4]	**[10M]**
6	Write an assembly program of 8051 µC to multiply two 8-bit numbers and store the result in a memory location.	[L4][CO4]	**[12M]**
7	a) Mention various arithmetic operations performed in assembly language.	[L2][CO4]	**[2M]**
	b) Explain the arithmetic Instructions of 8051 µC with an example.	[L2][CO4]	**[10M]**
8	a) Describe the operation of return instruction in 8051 µC with suitable example.	[L2][CO4]	**[3M]**
	b) Explain how the 8051 µC performs rotate and swap operations with an example.	[L2][CO4]	**[7M]**
9	a) Write an assembly program of 8051 µC to divide two 8-bit numbers and store the result in a memory location.	[L2][CO4]	**[6M]**
	b)Write an assembly program of 8051 µC to subtract two 8-bit numbers and store the result in a memory location.	[L2][CO4]	**[6M]**
10	a) Write an assembly program of 8051 µC to logically AND two 8-bit numbers and store the result in a memory location.	[L2][CO4]	**[6M]**
	b)Write an assembly program of 8051 µC to logically OR two 8-bit numbers and store the result in a memory location.	[L2][CO4]	**[6M]**

UNIT –V
APPLICATIONS

1	a) With a neat diagram, show the interfacing of a 4x4 matrix keypad with 8051 µC.	[L4][CO5]	**[7M]**
	b) Describe key bouncing problem andde-bouncing solutions.	[L6][CO5]	**[5M]**
2	Describe with a schematic, the scanning of the 4x4 matrix keyboard in an 8051 basedsystemand identifying thekeypressed.	[L4][CO5]	**[12M]**

3	a) Write a short note onLCDDisplay.	[L1][CO5]	**[3M]**
	b) With the help of a neat diagram show the interfacing of LCD Display with 8051 µC and explainitsoperation.	[L4][CO5]	**[9M]**
4	a) List instruction command codes for programminganLCD.	[L1][CO5]	**[8M]**
	b) List the merits, demerits and applications of an LED display overanLCD.	[L4][CO5]	**[4M]**
5	a) List the features of 16X2LCDdisplay.	[L4][CO5]	**[3M]**
	b) Draw and explain the pin Diagram of 16x2LCD display.	[L2][CO5]	**[9M]**
6	a) Write a short note on7-Segemnt display.	[L3][CO5]	**[3M]**
	b) With the help of a neat diagram, show the interfacing of 7-segment display with 8051 µC and explainitsoperation.	[L2][CO5]	**[9M]**
7	a) Write a short note on Analog toDigitalConverter.	[L1][CO5]	**[3M]**
	b) With the help of a neat diagram, show the interfacing of ADC 0808 with 8051 µC and explain itsoperation.	[L2][CO5]	**[9M]**
8	a) Define Interrupt and classifytheinterrupts.	[L1][CO5]	**[4M]**
	b) Explain multiple interrupts present in8051µC.	[L2][CO5]	**[8M]**
9	Design and explain anymicrocontroller-basedsystem.	[L4][CO5]	**[12M]**
10	Design and explain the implementation of 4-way traffic control system using 8051 microcontroller.	[L4][CO5]	**[12M]**

                                                        Prepared by:

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