Register

1.A.	Describe the importance of segment registers in the 8086 microprocessor?
1.B.	Describe the importance of the DX & CX register in the 8086 microprocessor?

1.A.	Mention the address & data bus width of the 8086 microprocessor?
1.B.	Describe the functions of the BL, BH, AL & AH register in the 8086 microprocessor?
1.C.	Describe the function of the DI (Destination Index) and SI (Source Index) registers in the 8086 microprocessor?

1.C	Describe the function of the Segment register in the 8086 microprocessor?	CO1

3	Answer all questions [	
3.A	Explain the purpose and operation of the flag register in the 8086 microprocessor.	CO1

Physical memory

3.A.	Illustrate the concept of Memory Segmentation in 8086? Calculate the physical address of the logical address 3232H: 2040H?

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1	Answer all questions [	
1.A	How to calculate the 20-bit physical address in 8086 processor?	CO1

PIN;

1.C.	Mention the two operating modes of the 8086 microprocessor?

2.A.	Illustrate the following Signals in 8086 and write its direction (input or output): (i) MN/MX' (ii)ALE iii) DT/R'

2.A.	Illustrate the Minimum Mode Pins in 8086 processor and explain them?

2.A	Illustrate the following Signals in 8086 and write its direction (input or output): I. INTR II. ALE III. HOLD	CO1

Addressing modes:

2.B.	Describe the 8086-microprocessor immediate addressing mode and Register addressing mode with an example.

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2.B	Describe the 8086-microprocessor register indirect addressing mode and direct addressing mode with an example.	CO1

Timing Diagrams

4.A.	Sketch the "Memory Write" Cycle Timing Diagram in Minimum Mode of 8086 with necessary pins and explain in brief.

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Programs

3.B.	Develop an 8086 ALP to find the even & odd number in an array of ten bytes. Add comments to your program.

3.B.	Develop an 8086 ALP to find the positive & negative numbers in an array of ten bytes. Add comments to your program.

4.B.	Write a program to subtract a data byte located at offset 0800h in 6500h segment to another data byte available at 0801h in the same segment and store the result at 0802h in the same segment.

4.B.	Write a program to subtract a data byte located at offset 0800h in 6500h segment to another data byte available at 0801h in the same segment and store the result at 0802h in the same segment.

4.B	Write a program to multiply a data byte located at offset 0430h in 4567h segment to another data byte available at 0431h in the same segment and store the result at 1200h in the same segment.	CO1

3.B	Develop an 8086 ALP to find the largest number in an array of ten bytes. Add comments to your program.	CO1

4.A	Discuss the following instructions with the help of Examples? I. OR AX, AX II. AND AX, [0ABCDH] III. RCL AL,01H IV. RCR AL,01H V. RCL VI. RCR	CO1	8

CO2

Register

1.D.	Mention the four primary register banks in the 8051 microcontroller.

1.D	Name two bit-addressable registers and draw the structure in the 8051 microcontroller.	CO2	

PSW

1.E.	Describe the importance of Stack Pointer register in the 8051 microcontroller?
1.F.	How many flags are available in the flags register of the 8051 microcontroller?

2.D	Demonstrate the process involved in selection of Register Bank 2 in 8051? Mention the addresses allotted for first and last register of Register Bank 2?	CO2	

1.F	Describe the status of the PSW (Program Status Word) register in the 8051 microcontroller with an example?	CO2	

6.B	Write an ALP to transfer the contents of the registers R0, R1 and R2 respectively of bank 0 to the registers R0, R1 and R2 respectively of bank 1 using stack operation.	CO2	

Architecture

1.D.	Describe the maximum number of external devices that can be connected to the 8051 micro controller?
1.E.	What is the size of the program memory in the 8051 micro controller?

5.A.	Illustrate the blocks of 8051 with a neat Block Diagram and Sketch the alternate functions of all the Ports in 8051.

Addressing modes

2.C	Classify any two addressing modes of 8051 and explain the significance of each mode with an example.	CO2

RAM architecture

5.B.	Write a program to copy the last two digit of your course code number into RAM memory locations 40h o 4Ah using a branch instruction?

Timers

2.C.	Bring out the functionality of the TMOD register functions in 8051?

2.C.	Discuss the concept of 8051 timers?

Serial Communication

2.D.	Explain how to be doubling the 8051's serial communication baud rate.

6.A.	Write an ALP & Mention the necessary steps involved to transmit a character bytes serially in 8051controller?

6.A	Write an ALP to transfer the character "KLU" serially using 8051 microcontroller?	CO2

1.F.	Name two serial communication modes supported by the 8051 micro controller.

2.D.	Mention the differences between synchronous and asynchronous mode of communication and discuss the asynchronous framing concept with one example?

Interrupts:

6.A.	Explain the concept of interrupts in the 8051 microcontroller and how they are prioritized.

1.E	Mention the structure of the IE (Interrupt Enable) register in the 8051 microcontroller?	CO2

Programs

6.B.	Develop an ALP to Create any Pattern using 8 LED's using 8051 microcontroller.

5.B.	Write a program to clear 10 ram locations starting from the address 30h?

6.B.	Develop an 8051 ALP to Convert packed BCD to two unpacked numbers and place them in registers R3 & R4. Assume A has 65h.	

5.B	Write an 8051 Microcontroller program to copy a block of 10 bytes of data from 40H to 50H.	

Instruction Set:

5.A.	Describe any 5 arithmetic instructions of the 8051 microcontroller in detail with examples.	

5.A	Describe any 5 logical instructions of the 8051 microcontroller in detail with examples.	CO2