

IV-SEM ETC/CSE/IT/AEI/ELECT. & ETC/2019(W)
ETT-402/CST-403/ITT-403/AIT-402 MICROPROCESSOR & ITS INTERFACING

Full Marks- 80

TIME- 3 Hour

Answer any FIVE questions including Q.1 and Q.2.
Figure in the right hand margin indicates marks.

1. Answer ALL the questions.

- a) Define Microprocessor & write any two of its application. [2X10]
- b) Define BUS and write down the different types of BUS.
- c) What is stack pointer and programme counter?
- d) What is assembler and write down the different types of assembler?
- e) Write down the different types of instruction sets in 8085 microprocessor.
- f) What is sub-routine?
- g) What is machine code?
- h) Define T-state in timing diagram.
- i) What is PPI and PIC ?
- j) Write down the addressing modes in 16 bit microprocessor.

2. Answer any SIX of the followings questions

[5X6]

- a) Briefly write down the evolution of microprocessor.
- b) Explain register and different types of register in 8085 microprocessor.
- c) What is addressing mode. Write down the different types of addressing mode of 8085 microprocessor with examples.
- d) Write a simple assembly programme for 1's complement and 2's complement.
- e) Explain the following(**any TWO**)
 - i. T-state
 - ii. Fetch cycle
 - iii. Machine cycle
 - iv. Instruction cycle
- f) Explain the functional block diagram of 8251 (USART).
- g) What are the instruction sets of 8086 microprocessor? Explain with proper examples.

3. Draw and explain the basic block diagram and pin diagram of 8085 microprocessor. [10]

4. Write a programme to arrange numbers in ascending and descending order using sub-routine . [10]

5. Draw timing diagram of the followings [5X2]

- i. LDA 2500 H instructions
- ii. I/O write machine cycle

6. Draw and explain the block diagram and pin diagram of 8255 PPI . [10]

7. Draw the basic block diagram of 8086 microprocessor and explain the maximum and minimum mode of operation. [10]



IV-SEM/ETC/CSE/IT/2017(W) [21/12/2018, EX-REG]

MICROPROCESSOR AND ITS INTERFACING

Sub Code – ETT-402

Full Marks: 70

Time: 3 hours

Answer any **FIVE** Questions

The figures in the right-hand margin indicate marks

1. (a) What is the function of SBI and CPI? [2]
(b) With neat sketch explain the different bits of control word for Intel 8255. [5]
(c) Describe internal architecture of 8085 microprocessor with a block diagram. [7]
2. (a) What do you mean by maskable and non-maskable Interrupt with examples? [2]
(b) Define bus. With neat sketch explain the general bus structure of Intel 8085 MPU. [5]
(c) Write an assembly language program to find the largest data in array of data stored in memory location with example. [7]
3. (a) What is the function of S₀ and S₁ pins of 8085 Microprocessor? [2]
(b) What do you mean by microprocessor, micro-computer & microcontroller? Discuss the different generation of microprocessor. [5]
(c) Write an interfacing program for Traffic Light control System with a neat diagram. [7]
4. (a) What is the difference between RLC and RAL? [2]
(b) Design a time delay by using one register. Find the maximum time delay using one register. [5]
(c) What do you mean by DMA technique? Draw the pin diagram of Intel 8257 and describe the function of each pin. [7]
5. (a) What do you mean by ADC and DAC? [2]
(b) Write a complete ALP to two 8-bit number s in memory. Where sum is 16 bit and stored the result in another memory location. [5]
(c) Differentiate between instruction cycle, machine cycle and T-state. Draw the timing diagram for the instruction MOV M, D. [7]
6. (a) Write any two different between 8085 and 8086 Microprocessor. [2]
(b) With neat sketch explain different bits of status flag of Intel 8086 microprocessor. [5]
(c) What do you mean by programmable and non-programmable Interfacing devices? [7]
7. (a) What do you mean by PPI, PIC, DMA and USART? [2]
(b) With necessary diagram, explain the operation of stack pointer stack top and program counter. [5]
(c) Draw the block diagram of 8086 microprocessor & explain function of each block briefly. [7]



IV-SEM/ETC/CSE/IT/2018(S) [08-05-18, REG]

MICROPROCESSOR AND ITS INTERFACING

Sub Code – **ETT-402**

Full Marks: 70

Time: 3 hours

Answer any **FIVE** Questions

The figures in the right-hand margin indicate marks

1. (a) Define Microprocessor and its Application. [2]
(b) Distinguish between Microprocessor and Microcomputer. [5]
(c) Explain Evolution of Microprocessor. [7]
2. (a) Define Architecture. [2]
(b) State and explain Stack Pointer, Stack and Stack Top. [5]
(c) Describe Pin Structure of 8085 Microprocessor. [7]
3. (a) Define Addressing Modes. [2]
(b) Explain the basic Assembler Directives. [5]
(c) Explain need for addressing data and differentiate between 1-address, 2-address and 3-address Instructions with examples. [7]
4. (a) Define Stack. [2]
(b) Explain the 16 bit data operation. [5]
(c) Describe the Largest number and Smallest number in the array. [7]
5. (a) Define Machine Cycle. [2]
(b) State the differentiate between Instruction cycle and Machine Cycle. [5]
(c) Draw timing diagram for memory read, memory write, I/O Read & I/O Write machine cycle. [7]
6. (a) Describe ADC and DAC with Interfacing. [2]
(b) Explain Memory Interfacing with RAM and EPROM to Microprocessor. [5]
(c) Draw the pin diagram of 8255 and describe the function of each pin. [7]
7. (a) Define Mapping. [2]
(b) Explain Addressing Modes of 8086. [5]
(c) Explain the basic 8086 system timing diagram. [7]

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IV-SEM/ETC/CSE/IT/2017(W) [22/12/2017, BACK]

MICROPROCESSOR AND ITS INTERFACING

Sub Code – **ETT-402**

Full Marks: 70

Time: 3 hours

Answer any **FIVE** Questions

The figures in the right-hand margin indicate marks

8. (a) What is the difference between Microprocessor and Microcontroller? [2]
(b) With neat sketch explain the each bit position of CWR of Intel 8255 with example. [5]
(c) Draw the pin diagram of 8085 microprocessor and explain the function of each pin. [7]
9. (a) What is the function of Stack Pointer & Program Counter? [2]
(b) What is bus? With neat diagram explain BUS structure of 8085 microprocessor. [5]
(c) Draw the functional block diagram of Intel 8255 & explain the function of each block. [7]
10. (a) What is the difference between SUB B and CMP B instruction of Intel 8085? [2]
(b) Explain different addressing modes of 8085 microprocessor with examples. [5]
(c) Write an assembly language program to find the greatest number between two 8-bit numbers. The two numbers are to be stored in memory location 8501, 8502 and the output will be Stored in the memory location 8503H. [7]
11. (a) What do you mean by self assembler & cross assembler? [2]
(b) Draw the timing diagram for instruction MOV M, D of 8085 microprocessor. [5]
(c) Design a traffic light controller program with a neat block diagram. [7]
12. (a) Write the full form of PPI, PIC, DMA and USART. [2]
(b) What is time delay? Calculate the maximum time delay for One registers. [5]
(c) Explain the functional block diagram of Intel 8086 microprocessor with a neat diagram. [7]
13. (a) What do you mean by DMA techniques? Which pins of 8085 belongs to this group? [2]
(b) Draw and explain different bits of flag registers of 8086 microprocessor. [5]
(c) Draw the functional block diagram of Intel 8259 & explain the function of each block. [7]
14. (a) Name different types of Hardware interrupts in the ascending order of their priority. [2]
(b) Explain 1-byte, 3-byte & 3-byte Instruction of 8085 with example? [5]
(c) Write an assembly language program to find out decimal subtraction of two 8-bit data. [7]

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IV-SEM/ETC/CSE/IT/2017(S) <APR-2017, REG>

MICROPROCESSOR AND ITS INTERFACING

Sub Code – **ETT-402**

Full Marks: 70

Time: 3 hours

Answer any **FIVE** Questions

The figures in the right-hand margin indicate marks

1. (a) What an instruction consists of? [2]
(b) Distinguish between Microprocessor and Microcomputer and give its applications. [5]
(c) Draw the Architecture of 8085 and mention its various function of each block. [7]
2. (a) What is the purpose of CLK signal of 8085 and name types of clock circuits? [2]
(b) Describe three state registers and concept of multiplexing. [5]
(c) Draw the BUS structure of 8085 and explain the function of address bus, data bus, control Bus and system bus. [7]
3. (a) Which are sixteen bit registers of 8085? [2]
(b) Explain basic assembler directive and write a program to add two 8-bit nos. and store the Result (8 bit) using assembler directives. [5]
(c) Explain different types of Instructions of 8085 with examples. [7]
4. (a) What is the function of ALE and where it is play an important role? [2]
(b) Define T-State, Fetch Cycle, Machine Cycle and Instruction Cycle. [5]
(c) Draw the opcode Fetch Machine Cycle of 8085 and discuss it. [7]
5. (a) Define addressing and why it is required? [2]
(b) Write a program to transfer 10 nos data stored in consecutive memory location from 8000H to 9000H using 8085 Instruction sets. [5]
(c) Write a program to find the smallest number in the array using 8085 instruction. [7]
6. (a) Write the Hardware interrupts in Priority order. [2]
(b) Describe the internal architecture of 8255 interfacing chip with a neat block diagram. [5]
(c) Write a program to interface Traffic Light Control system of only one side with desired delay for Red, Yellow and Green Light using 8085 Instruction sets. [7]
7. (a) What is the function of USART? [2]
(b) Explain different addressing modes of 8086 with examples. [5]
(c) Write an ALP to evaluate $x (y + z)$, where $x = 10H$, $y = 20 H$ and $z = 30 H$ using 8086 Instruction sets. [7]

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IV-SEM/ETC/CSE/IT/2016(S) <APR-2016, REG>

MICROPROCESSOR AND ITS INTERFACING

Sub Code – ETT-402

Full Marks: 70

Time: 3 hours

Answer any **FIVE** Questions

The figures in the right-hand margin indicate marks

1. (a) Why data bus in microprocessor bidirectional? [2]
(b) Draw the timing diagram for the instruction MOV B, A instruction of 8085 microprocessor.
(c) Draw the pin diagram of 8085 microprocessor and explain the function of each pin. [7]
2. (a) What do you mean by program counter? [2]
(b) Describe the different addressing modes available in 8085 microprocessor and give Explanation the function of each. [5]
(c) Write a program to transfer 16 memory location form one memory location to other memory location in user area using 8085 instruction. [7]
3. (a) Name different types of flag register available in 8086 microprocessor. [2]
(b) What function is performed by each of the flowing instruction? [5]
(I) MOVA, B (III) LDA (V) AND B
(II) LDAX (IV) CMA (VI) DCR C
(c) What is stepper motor? Write with a neat interfacing diagram and programme for stepper motor control. [7]
4. (a) Which instructions are used for subroutine and what is cast statement of subroutine program?
(b) Ten 8bit nos are stored starting from memory location 4200H. Find the greatest of the array and stored it of a memory location 4300H. Write an ALP for 8085 microprocessor. [5]
(c) Draw the internal block diagram of 8255A chip and explain the function of each pin. [7]
5. (a) Define Opcode and operand. [2]
(b) State and explain stack, stack pointer and stack top. [5]
(c) What do you mean by Universal timer 8253? Explain each block with a block diagram. [7]
6. (a) What is the difference between the two instructions MOV and MVI? [2]
(b) Describe briefly about ADC and explain how they interface with 8085 MP with neat diagram
(c) Give the schematic diagram of various register organization of 8086 microprocessor and explain the function briefly. [7]
7. (a) What do you mean by Delay routine? [2]
(b) Describe between memory mapping and I/O mapping with their applications. [5]
(c) Write a delay subroutine program of ms in 8085 processor based system whose clock frequency is 3 MHz .(Give also suitable flow chart) [7]



IV-SEM/ETC/CSE/IT/2015(S) <APR-2015, REG>

MICROPROCESSOR AND ITS INTERFACING

Sub Code – ETT-402

Full Marks: 70

Time: 3 hours

Answer any **FIVE** Questions

The figures in the right-hand margin indicate marks

1. (a) What is the difference between two instructions MOV and MVI? [2]
(b) Why addressing modes are required and briefly describe various types of addressing modes of 8085 with examples. [5]
(c) Draw the Architecture of Intel 8085 microprocessor through a block diagram and explain the Function of each block. [7]
2. (a) What are different methods of interfacing of I/O devices to 8085 based system? [2]
(b) Write a complete assembly language program to find the decimal subtraction of two 8-bit numbers and store the result in memory location in 4080 H. [5]
(c) Draw the functional block diagram of internal architecture of 8086 microprocessor and Explain the function of each block briefly. [7]
3. (a) What are the function of DAA instruction and where the instruction is not used. [2]
(b) Draw the different bits of the flag register of Intel 8085 microprocessor and explain the Function of each flag with example. [5]
(c) Write an assembly language program to find the smallest data in an array of 8-bit data stored in memory location with example. [7]
4. (a) Write the various hardware interrupts of 8085 microprocessor in ascending order. [2]
(b) Draw a neat sketch for the timing diagram for the DCR instruction. [5]
(c) Draw the pin diagram of 8255 chip and describe the function of each pin. [7]
5. (a) How many modes can 8255 operate and name them. [2]
(b) Design a time delay by using register pair. Find maximum time delay using one register. [5]
(c) With neat sketch state and explain the function of stack pointer and stack top. [7]
6. (a) Name the different types of assembler directive of Intel 8085. [2]
(b) With necessary diagram explain the operation of stack pointer and programme counter. [5]
(c) Write an interfacing programme for stepper motor control with a suitable diagram. [7]
7. (a) Which instructions are used for the operation of stack and subroutine? [2]
(b) Define different registers of 8085 and distinguish between GPR and SPR. [5]
(c) State the overview of microcontroller 8051 in a block diagram. [7]

----- ALL THE BEST ----- ALL THE BEST -----

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IV-SEM/ETC/CSE/IT/2014(S) <APR-2014, REG>

MICROPROCESSOR AND ITS INTERFACING

Sub Code – ETT-402

Full Marks: 70

Time: 3 hours

Answer any **FIVE** Questions

The figures in the right-hand margin indicate marks

1. (a) What is BUS? Name the different types of buses in 8085. [2]
(b) Define a microprocessor. Differentiate between microprocessor and microcontroller. [6]
(c) Draw the functional block diagram of internal architecture of 8085 microprocessor and Explain the function of various blocks. [8]
2. (a) How program counter is useful in program execution? [2]
(b) State and explain the function of stack, stack pointer and stack top. [6]
(c) What do you mean by addressing modes and why it is required for microprocessor? Explain with suitable examples of different addressing modes of 8085 microprocessor? [8]
3. (a) What is delay routine? What are the types of delay routine? [2]
(b) Write programming technique for achieving time delay 1 msec in 8085 .microprocessor where clock frequency is 6 MHz. [6]
(c) Write the different types of programming techniques for achieving time delay. [8]
4. (a) What are the various machine cycles of 8085? [2]
(b) Write a program to find the largest number in array using microprocessor (8085) instruction. [6]
(c) Differentiate between the instruction cycle, machine cycle and T-state. Draw the timing diagram for MVI B, 50H [OP code for MVI B is 06]. [8]
5. (a) What are the operating modes of port a available in 8255? [2]
(b) Frame a control word for the ports of 8255 as instructed below for mode-O operation. [6]
(i) Port - A input (iii) Port - C upper, output
(ii) Port - B input (iv) Port - C lower input
(c) Draw the internal block diagram of 8255A chip and explain the function of each block. [8]
6. (a) Which interfacing chips are required for traffic light system and what are they? [2]
(b) Write the interfacing program for stepper motor control with a suitable flowchart using 8085. [6]
(c) Write the programming techniques for time delay using register pair with flowchart. [8]
7. (a) How many memory location can be addressed by 8086 up? [2]
(b) Write short note on 8051 interfacing chip. [6]
(c) Draw the pin diagram of 8086 up and explain the function of each pin. [8]



IV-SEM/ETC/CSE/IT/2013(S) <APR-2013, REG>

MICROPROCESSOR AND ITS INTERFACING

Sub Code – ETT-402

Full Marks: 80

Time: 3 hours

Answer any **FIVE** Questions

The figures in the right-hand margin indicate marks

1. (a) What is ALE? [2]
(b) Discuss the various types of addressing modes of 8085 microprocessor with examples. [6]
(c) Draw the pin structure of 8085 microprocessor and explain the function of each pin. [8]
2. (a) What is the function of program counter? [2]
(b) Differentiate between SPR and GPR. [6]
(c) Write an assembly language program to find the smallest data in an array of N data stored in the memory location whose starting address is 2500 H and result stored at 2800 H. [8]
3. (a) What is the purpose of HOLD and HLDA signal in 8085 microprocessor? [2]
(b) Draw the timing diagram for the instruction MOV B, A instruction of 8085 microprocessor?
(c) Write an assembly language program using 8085 instruction to add two 8-bit numbers stored in memory location 3250 H and 3251 H and store result in 3252 H memory location. [8]
4. (a) In how many modes can 8255 operate and name them. [2]
(b) Differentiate between memory mapped I/O and I/O mapped I/O. [6]
(c) Draw the functional block diagram of 8255 and explain the function of each block. [8]
5. (a) Name different flags of 8086. [2]
(b) Differentiate between 8085 and 8086 microprocessor? [6]
(c) Explain the minimum and maximum mode operation of 8086 with pin diagram. [8]
6. (a) Define instruction cycle. [2]
(b) What are functions of the following instruction:
(i) XCHG (ii) LDA 2004 H (iii) INX (iv) SHLD 2050 H [6]
(c) Write interfacing program for stepper motor control with a suitable diagram. [8]
7. (a) Define interrupt. [2]
(b) Describe stack, stack pointer and stack tap & which instructions are used for stack operation.
(c) Explain the functional block diagram of 8259 programmable interrupt controller. [8]

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IV-SEM/ETC/CSE/IT/2012(S) <APR-2012, REG>

MICROPROCESSOR AND ITS INTERFACING

Sub Code – ETT-402

Full Marks: 80

Time: 3 hours

Answer any **FIVE** Questions including Q. No. 1 and 2

The figures in the right-hand margin indicate marks

1. Answer **ALL** question: [2x10]
 - (a) Why the address bus is unidirectional?
 - (b) What is the purpose of HOLD and HLDA signal in 8085 microprocessor?
 - (c) Define assembler.
 - (d) Which flags will be affected by the execution of SUB instruction?
 - (e) Define Opcode and operand.
 - (f) What are the various hardware interrupts in 8085 microprocessor?
 - (g) Write a program to clear memory location 0100 H in an 8085 microprocessor system.
 - (h) What is the minimum & maximum mode in 8085 microprocessor and where it is used?
 - (i) Write the formula to calculate the physical address of a memory location in 8085 MPU.
 - (j) Define interfacing and name the signal lines required to perform I/O interfacing.

2. Answer any **SIX** question of the following: [6 X 5]
 - (a) What is the function of flag register?
 - (b) Name the different flags used in 8085 microprocessor and explain.
 - (c) Draw and explain the timing diagram of the instruction MOV E, A in 8085 microprocessor.
 - (d) Classify 8085 instructions in various groups.
 - (e) Give examples of one instruction for each group along with the-function of each group.
 - (f) Explain what is subroutine? What instruction is used to call a subroutine?
 - (g) Write programming technique for achieving time delay 0-5 sec in 8085 microprocessor whose clock frequency is 3 MHz
 - (h) Explain the functional block diagram of 8251 programmable communication interface.
 - (i) Give the structure of Register Organization of 8086 microprocessor and write the registers.
 - (j) Explain basic features of 8087 coprocessor.

3. Explain different addressing modes used in 8085 microprocessor with two examples in each [10]
4. Draw the functional block diagram of internal architecture of 8086 microprocessor and explain the function of each block briefly. [10]
5. (a) State and explain stack, stack pointer and stack top. [5]
(b) Explain the interrupts in 8086 microprocessor. [5]
6. Draw the internal block diagram of 8255 A chip and explain the function each block. [10]
7. Write short notes on any **TWO**: [5×2]
 - I. Traffic light control system
 - II. Difference between memory mapped I/O and I/O mapped I/O
 - III. Comparison between 8086 and 8088 microprocessor
 - IV. Describe DAC interfacing.



IV-SEM/ETC/CSE/IT/2011(S) <APR-2011, REG>

MICROPROCESSOR AND ITS INTERFACING

Sub Code – ETT-402

Full Marks: 80

Time: 3 hours

Answer any **FIVE** Questions including Q. No. 1 and 2

The figures in the right-hand margin indicate marks

1. Answer **ALL** question: [2x10]
 - (a) What are bus and name different types of bus used in 8085 microprocessor.
 - (b) What do you mean by ALE?
 - (c) What are the different flags of available in 8086 microprocessor?
 - (d) What is the difference between the two instructions MOV and MVI?
 - (e) What are the different methods of interfacing of I/O devices to 8085 based system?
 - (f) What are the instructions used for stack operation?
 - (g) What are the function of DAA instruction and where this instruction is used?
 - (h) Name the different types of interrupts according to their priority.
 - (i) What do you mean by stack and stack pointer?
 - (j) What is the function of Program Counter?

2. Answer any **SIX** question of the following: [5 x 6]
 - (a) Describe the pin diagram of Intel 8085 Microprocessor.
 - (b) Differentiate between SPR and OPR used in 8085 Microprocessor.
 - (c) Differentiate between 1-address, 2-address & 3-address instructions of 8085 with examples.
 - (d) Write an assembly language programme to find the greatest number in an array.
 - (e) Describe briefly about ADC and explain how they interface with 8085 with a neat diagram.
 - (f) What are the functions of the following instructions :
 - (g) (i) MOV A, B (ii) LDA 8502 H (iii) SBI 05H (iv) CMA (v) NOP.
 - (h) Explain the different modes of operation of Intel 8255.
 - (i) Draw the timing diagram for the instruction MVI A, 15H.

3. Write an interfacing program for a traffic light control system using 8255. [10]
4. Draw the block diagram of internal architecture of 8085 microprocessor and discuss the function of various blocks. [10]
5. Write an assembly language programme with assembler directives for addition of two 8 bit numbers, i.e., $x = 86$, $y = 72$ and the starting memory location is 7800 H. Give also the level Mnemonics, Operands and Comments. [10]
6. State overview of 8051 micro-controller with a neat block diagram. [10]
7. What do you mean Universal timer 8253? Explain each block with a suitable bloc diagram. [10]

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MICROPROCESSOR AND ITS INTERFACING

Sub Code - ETT 521

Full Marks: 70

Time: 3 hours

Answer any FIVE Questions

The figures in the right-hand margin indicate marks

1. (a) What is microprocessor ? 2
(b) Describe evolution of microprocessor. 5
(c) Describe bus structure of 8085 microprocessor. 7
2. (a) What are different interrupts of 8085 microprocessor ? 2
(b) Describe PSW. 5
(c) Draw pin diagram of 8085 microprocessor and describe function of each pin. 7
3. (a) What is hand assembler and cross assembler ? 2
(b) Write a program to find largest data in an array using instructions of 8085. 5
(c) Explain stack and subroutine. 7
4. (a) What is secondary memory ? 2
(b) Describe different addressing memory location. 5
(c) Describe briefly internal organization of RAM and ROM. 7
5. (a) What is T state ? 2
(b) Draw timing diagram of MOV C, A and explain it. 5
(c) What is addressing mode ? Describe different type of addressing modes with examples. 7
6. (a) Explain control word of 8255. 2
(b) Describe operation of ADC 0805. 5
(c) Describe functional block diagram of 8255 with a neat block diagram. 7
7. (a) Write down the specification of DAC. 2
(b) Describe interrupt modes of 8259. 5
(c) Write a program for traffic light control using 8085 instruction sets and interfacing kits. 7

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MICROPROCESSOR AND ITS INTERFACING

Sub Code - ETT 521

Full Marks: 70

Time: 3 hours

Answer any **FIVE** Questions

The figures in the right-hand margin indicate marks

- 1)
 - (a) Define a Microcomputer and mention at least two applications of it. [2]
 - (b) Explain the generation of clock pulse and reset circuit of Intel 8085A microprocessor. [5]
 - (c) Draw the functional block diagram of Intel 8251 USART and explain each block. [7]
- 2)
 - (a) What are the different interrupts present in Intel 8085A microprocessor? Write in order of their priority. [2]
 - (b) Discuss different types of addressing modes of Intel 8085 microprocessor with example. [5]
 - (c) With necessary interfacing diagram and software explain the operation of a simple traffic light controller which is controlled by Intel 8085A microprocessor. [7]
- 3)
 - (a) What is a port? How many ports are there in Intel 8255 PPI? [2]
 - (b) Two 8-bit datas 75H and 25H are present in the memory location 9500H and 9501H. Write an assembly language program for Intel 8085A microprocessor to find the smaller number and save it in the memory location 9550H. [5]
 - (c) What is a timing diagram? Draw the timing diagram for Opcode fetch operation of Intel 8085A microprocessor and explain in brief. [7]
- 4)
 - (a) What are the functions of ALE and $\overline{IO/\overline{M}}$ signals of the Intel 8085A microprocessor? [2]
 - (b) What are different types of memory which are usually used with digital computer? Give their important features in brief. [5]
 - (c) Draw the interfacing diagram of ADC 0808 with Intel 8085A microprocessor and develop the necessary assembly language program for its operation. [7]
- 5)
 - (a) Define Opcode and operand. [2]
 - (b) What are the different status flags present in Intel 8085A microprocessor? Explain the role of each flags. [5]
 - (c) Draw the pin configuration of Intel 8259 PIC and explain each pin. [7]
- 6)
 - (a) How many special purpose registers present in Intel 8085A microprocessor. Enlist them. [2]
 - (b) Define the following instructions in connection with Intel 8085A microprocessor: -
(i) MVI r, data (ii) LDA addr (iii) RAL (iv) JMP addr (Label) (v) XCGH [5]
 - (c) Write an assembly language program for Intel 8085A microprocessor to add ten (10) eight-bit numbers whose sum is also eight bit and save the result in memory location 6500H. [7]
- 7)
 - (a) What is subroutine? What instruction is used to call a subroutine? [2]
 - (b) What is microprogramming? Give examples of (i) CPUS which used microprogramming (ii) and the CPUS which do not use microprogramming. [5]
 - (c) Draw the pin diagram of Intel 8085A microprocessor and explain function of each pins. [7]

MICROPROCESSOR AND ITS INTERFACING

Sub Code - ETT 521










Full Marks: 70

Time: 3 hours

Answer any **FIVE** Questions

The figures in the right-hand margin indicate marks

1. (a) What is Microprocessor? [2]
(b) Explain briefly the evolution of Microprocessor. [5]
(c) Explain register organization of 8085 Microprocessor. [7]
2. (a) What are different interrupts of 8085 Microprocessor? [2]
(b) What is addressing mode? Explain different addressing mode with examples. [5]
(c) Draw the timing diagram of MOV A, B. [7]
3. (a) What is T State? [2]
(b) What is Stack, Stack Top and Stack Pointer? Why it is needed? [5]
(c) Write an Assembly Language Program, to sum two 8-bit numbers and result is 16-bit. [7]
4. (a) What is Modular programming? [2]
(b) Describe Internal Organization of RAM and ROM. [5]
(c) What are different ways of address space partition? [7]
5. (a) What is the function of XCHF and RAL Instruction? [2]
(b) Explain status flag of 8085 Microprocessor. [5]
(c) Draw and describe pin diagram of 8085 Microprocessor. [7]
6. (a) What is USART? [2]
(b) Describe different operating modes of 8255. [5]
(c) Draw and describe the functional block diagram of 8259. [7]
7. (a) What are the different specifications of DAC? [2]
(b) Explain the principle operation of DAC 0808 with neat diagram. [5]
(c) Write a program to design Traffic Light Controller. [7]

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MICROPROCESSOR AND ITS INTERFACING

Sub Code - ETT 521

Full Marks: 70

Time: 3 hours

Answer any FIVE Questions

The figures in the right-hand margin indicate marks

- 1) [2 + 5 + 7]
 - a) What is BUS? What are different buses in microprocessor?
 - b) What is the difference between SPR and GPR?
 - c) Draw and explain the pin diagram of 8085 microprocessor?
- 2) [2 + 5 + 7]
 - a) Write the flag register of 8085.
 - b) Explain about the evolution of microprocessor.
 - c) Explain briefly different addressing modes of 8085 with example.
- 3) [2 + 5 + 7]
 - a) What do you mean by DMA technique?
 - b) Draw the timing diagram of instruction MVI A, 90H (Assume Memory locations 8051 & 8052).
 - c) Explain the CALL instruction.
- 4) [2 + 5 + 7]
 - a) Define an instruction cycle.
 - b) What is time delay? Calculate the time delay for two register.
 - c) Explain the functional block diagram of 8259.
- 5) [2 + 5 + 7]
 - a) Give one example of 1-byte, 2-byte and 3-byte instruction.
 - b) What is interrupt? What are types of interrupt in 8085? Explain each with example.
 - c) Write an assembly language programme to find addition of two 8-bit nos whose sum is 16-bit
- 6) [2 + 5 + 7]
 - a) Differentiate between Hand assembler and Cross assembler.
 - b) Describe the operational mode of Intel 8253.
 - c) Design a Traffic Light Controller with a neat interfacing diagram with 8085 instruction.
- 7) [2 + 5 + 7]
 - a) What is the difference between instruction CALL and JUMP?
 - b) Explain the principle of operation of ADC 0801 with example.
 - c) Draw the functional block diagram of 8255 and explain each block.

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Answer any **FIVE** Questions

The figures in the right-hand margin indicate marks

1. (a) What is microprocessor? [2]
(b) What is the difference between SPR and GPR? [5]
(c) With a neat block diagram explain the architecture of 8085 Microprocessor. [7]
2. (a) What is Flag and list the Flags of 8085? [2]
(b) Explain about Evaluation of microprocessor. [5]
(c) What is addressing modes? Describe about different type of addressing modes. [7]
3. (a) What is an instruction cycle? [2]
(b) Draw the Timing diagram of op code fetch. [5]
(c) Explain the CALL Instruction. [7]
4. (a) Why interfacing is required in microprocessor? [2]
(b) Distinguish between modular and structure programming. [5]
(c) Explain the functional Block Diagram of 8259. [7]
5. (a) What is the T – states? [2]
(b) Explain the internal organization of RAM and ROM. [5]
(c) Design a Traffic Light Controller using both hardware and software. [7]
6. (a) What are the different modes of operation of 8253 A? [2]
(b) What are the advantages of Assembly Language and High Level Language? [5]
(c) Explain about application of DAC for Speed Control of D.C. Motor. [7]
7. (a) What is an Interrupt? [2]
(b) Give a functional block diagram of 8255 (PPI). [5]
(c) Explain the working of Digital Clock with a neat block diagram. [7]

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Full Marks: 70

Time: 3 hours

Answer any **FIVE** Questions

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1. (a) Give two examples each of 2 byte and 3 byte instruction. [2]
(b) What is bus? With neat diagram explain bus structure of 8085 microprocessor. [5]
(c) Draw the pin diagram of 8085 microprocessor and explain the function of each pin. [7]
2. (a) What is the function of stack pointer and program counter? [2]
(b) With neat sketch the each bit position of Flag register of Intel 8085. [5]
(c) Explain the different addressing modes of 8085 microprocessor with examples. [7]
3. (a) What do you mean by self assembler and cross assembler? [2]
(b) Draw the timing diagram of instruction MOV B, M of 8085 microprocessor. [5]
(c) With neat block diagram explain the architecture of 8085 microprocessor and explain function of each block. [7]
4. (a) What do you mean by DMA techniques? [2]
(b) Write an ALP to sum of two 8-bit nos whose sum is 16 bit using 8085 instruction sets. [5]
(c) Draw the functional block diagram of Intel 8255 & explain the function of each block. [7]
5. (a) What do you mean by INR M Instruction? Write its number of machine cycles. [2]
(b) What is time delay? Calculate the maximum time delay for two resistors. [5]
(c) Design a traffic light controller program with a neat block diagram. [7]
6. (a) What is the difference between the instruction CALL and JUMP? [2]
(b) Explain with block diagram, the working of ADC 0800. [5]
(c) Draw the functional block diagram of Intel 8259 & explain the function of each block. [7]
7. (a) Name different types of Hardware interrupts in the ascending order of their priority. [2]
(b) Write the difference between SPR and GPR. [5]
(c) Write an ALP to find out subtraction of two 8 – bit data using 8085 instruction. [7]

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Sub Code - ETT 521

Full Marks: 70

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Answer any **FIVE** Questions

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1. (a) What is multiprocessor? Give an example. [2]
(b) Define the Buses in 8085 microprocessor. Why they are used? [5]
(c) Briefly explain the architecture of 8085 microprocessor. [7]
2. (a) What is machine cycle? [2]
(b) Draw the timing diagram of Memory Read operation. [5]
(c) Explain in brief about the register in 8085. [7]
3. (a) What is a volatile Memory and non-volatile memory? Give example of each. [2]
(b) Define Assembly language, High level language, Assembler & its types. State their uses. [5]
(c) Describe Addressing Modes of 8085 with examples. [7]
4. (a) Which instruction are used in Stack Pointer for putting a data and extracting a data? [2]
(b) Write a short note on Primary Memory and Secondary Memory. [5]
(c) Write a program for addition of two 8 bit number and sum is 16 bit. Using 8085 instruction Sets and store the result in 8085 memory location. [7]
5. (a) Define Primary and Secondary memory. [2]
(b) Define Program Status Word of Intel 8085. Explain each Flag. [5]
(c) Define the functional block diagram of 8085. [7]
6. (a) Differentiate Hand Assembler and cross assembler. [2]
(b) Explain briefly the Sub-routine. [5]
(c) Write a program to find the Largest number in a data array. Using 8085 MP instruction. [7]
7. (a) Name the interrupts in 8085. [2]
(b) Draw the pin diagram of 8085 and explain the function of each pin. [5]
(c) Describe the operation of DAC 0808 with interfacing to 8085 microprocessor. [7]

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Full Marks: 70

Time: 3 hours

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1. (a) Why interfacing is needed for I/C device? [2]
(b) What is evaluation of microprocessor & write any two application of microprocessor. [6]
(c) Draw the pin diagram of 8085A microprocessor and explain the function of each pin. [8]
2. (a) What are the interrupts of 8085? [2]
(b) Explain Address bus, Data bus and Control bus. [6]
(c) Explain the different addressing modes of 8085 microprocessor with examples. [8]
3. (a) Define mnemonics. [2]
(b) Draw the timing diagram of MVI A, 15H instruction of 8085 microprocessor. [6]
(c) Explain Arithmetic Group instructions with examples. [8]
4. (a) What is the function of XCHG instruction? [2]
(b) Explain Stack and Sub-routine programming instructions with examples. [6]
(c) Write a delay routine to produce a time delay of 0.8 sec in 8085 processor based system
Whose clock frequency is 3 MHz. [8]
5. (a) Give one examples of 1-byte, 2-byte and 3-byte instructions. [2]
(b) What is RAM and explain chip select generation of memory. [6]
(c) Draw the functional block diagram of Intel 8255 & explain the function of each block. [8]
6. (a) What is I/O Port addressing [2]
(b) Describe the operational modes of Timer chip Intel 8253. [6]
(c) Explain interrupts modes using 8259. [8]
7. (a) What is mean by 8 bit microprocessor? [2]
(b) Explain application of DAC for Speed Control of DC Motor using 8085 instructions. [6]
(c) Design a Digital Clock using 8085 microprocessor. [8]

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MICROPROCESSOR AND ITS INTERFACING

Sub Code - ETT 521

Full Marks: 70

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Answer any five questions

The figures in the right-hand margin indicate marks

1. (a) What is a Microprocessor? [2]
(b) What is the difference between SPR and GPR? [6]
(c) With a neat block diagram explain the Architecture of 8085 microprocessor. [8]
2. (a) What is the need for Addressing data [2]
(b) Explain the different Addressing modes of 8085 with example [6]
(c) What are the functions of following instructions? [8]
(i) SBI, 8 bit data (ii) CMP M (iii) RLC (iv) LHL D
3. (a) Write the Flag register of 8085. [2]
(b) Draw the timing diagram of MVI R, 8 bit data instruction with neat sketch. [6]
(c) Explain the CALL instruction. [8]
4. (a) What is an instruction cycle? [2]
(b) Define Stack, Stack Top and Stack Pointer. Why it is essential? [6]
(c) Differentiate between Structure and Modular programming. [8]
5. (a) What is Interfacing? [2]
(b) State and explain the ways in which address space can be partitioned. [6]
(c) Explain the functional block diagram of 8259. [8]
6. (a) What are the different modes of operation of 8253? [2]
(b) Design a Traffic Light Controller with a neat block diagram with 8085 instructions. [8]
(c) Write an assembly language program to subtract two numbers of 8 bit data stored in the memory location 2500_H and 2501_H and store the result in 2000_H. [6]
7. (a) Give any two specification of D/ A converter. [2]
(b) Explain principle of operation of ADC 0801 interfacing with example. [6]
(c) Explain the functional block diagram of 8255. [8]

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1. (a) What is BUS and what are the different buses in Microprocessor? [2]
(b) Explain briefly the evolution of Microprocessor. [6]
(c) Explain the architecture of Intel 8085 Microprocessor with a neat block diagram. [8]
2. (a) What are different types of data transfer operations possible? [2]
(b) Explain briefly different addressing modes of 8085 with examples. [6]
(c) Draw the timing diagram of instruction MOV B, A. Let program memory location 4080H. [8]
3. (a) What is function of LDAX and STAX instruction? [2]
(b) Draw the flowchart and write down the program to add two numbers 16H and D2H. Store the result in memory location 4080H using 8085 Microprocessor instruction. [6]
(c) Set up a delay of 10 ms. Assume 3MHz to be the Microprocessor clock frequency. [8]
4. (a) What is Stack and why it is used in a program? [2]
(b) Explain the CALL instruction. [6]
(c) What are the advantage of Assembly Language and High Level Language? [8]
5. (a) What are the ways in which the Address Space can be partitioned? [2]
(b) Explain the internal organization of RAM and ROM. [6]
(c) Design a Traffic light controller using both hardware and software. [8]
6. (a) Draw the Control Word format for I/O mode operation of PPI 8255. [2]
(b) Explain the functional block diagram of 8255. [6]
(c) Write a program for application of DAC for Speed Control of DC motor. [8]
7. (a) What is USART and why it is used? [2]
(b) Explain the functional block diagram of Intel 8251 with a neat diagram. [8]
(c) Explain principle of operation of ADC 0801 with example. [6]

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