Subject Name: MICROPROCESSOR AND INTERFACING
Subject Code: 3160712

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	UNIT - 1 **INTRODUCTION TO MICROPROCESSOR**	
Sr. no	**SHORT QUESTIONS**	**Marks**
1	Differentiate between assembly level language and machine level language [LJIET] **[DEC 2016 OLD]**	1
2	What is a microprocessor? [LJIET] **[DEC 2015 OLD]**	1
Sr. no	**DESCRIPTIVE QUESTIONS**	**Marks**
1	Distinguish between higher &lower level languages with an example of each. [LJIET] [**DEC 2012 OLD, MAY 2017 OLD]**	2
2	Sketch the bus structure of microprocessor and explain data, address and control bus.[LJIET] [**DEC 2012 OLD]**	7
3	Memory clas[illegible]	7
4	What is a microprocessor? List its internal sections with the major functions. What is system bus what is role[LJIET] [**MAY 2012 OLD]**	7
5	Distinguish between higher and lower level languages with an example of each .[LJIET] [**NOV 2016 OLD]**	7
6	Define Bus. List different Bus available in 8085 microprocessor. ? [LJIET] [JUN 2010, **JUN 2014 OLD]**	2
7	What are the advantages of Assembly lang[illegible] in comparison with High level languages?[LJIET] [**DEC 2[illegible]LD, DEC 2013 OLD]**	3
8	Why is data bus bidirectional in 8085? .[LJIET] [**DEC 2015 OLD NOV 2016 OLD]**	3
9	What is system bus? Give its role .[LJIET] [**DEC 2[illegible]LD]**	2
10	Explain the difference between a microprocessor and a [illegible][**NOV 2018 OLD]**	3
11	Write a short note on Memory Classification of 8085 Microprocessor. [LJIET] [DE[illegible]LD]	7
12	How can you determines that Microprocessor is an 8, 16 or 32 bit [LJIET] [DE[illegible]D]	3
13	Define microprocessor with its components. [[illegible]**OLD]**	3
14	Differentiate: (1) higher level language and low level language (2) hardware and software interrupt [LJIET] [**DEC 2021 OLD]**	4
15	Explain different types of system bus. [LJIET] [**DEC 2021 OLD]**	4
16	State short note on memory classification. [LJIET] [**DEC 2021 OLD]**	3
17	Explain system bus of 8085 microprocessor. [LJIET] [**NOV 2021 NEW]**	3
18	Explain Machine level language and Assembly level language with examples. [LJIET]**[JUN 2022 NEW]**	3
19	Explain 8085 bus organization. [LJIET]**[JUN 2022 NEW]**	4

	UNIT-2 MICROPROCESSOR ARCHITECTURE AND OPERATIONS	
Sr. no	**SHORT QUESTIONS**	**Marks**
1	How many maximum memory locations and I/O devices can be addressed by an 8085 microprocessor? [LJIET] [**DEC 2015 OLD]**	1
2	Explain why a latch is used for output port but a tri state buffer can be used for an input port. [LJIET] [**MAY 2015 OLD]**	1
3	Draw the structure of flag register of the 8085 microprocessor [LJIET] [**NOV 2016 OLD]**	1
Sr. no	**DESCRIPTIVE QUESTIONS**	**Marks**
1	What are Tri-state devices and why are they essential in a Bus oriented system?[LJIET] [**DEC 2013 OLD]**	3
2	How many address lines are necessary on the chip of 2K byte memory? [LJIET] **[DEC 2010 OLD]**	2
3	Draw and explain programming model of 8085 microprocessor. Explain working of 16 bit registers.[LJIET] [**JUN 2014 OLD]**	3
4	Draw the structure of flag register of the 8085 microprocessor [LJIET] [**MAY 2017 OLD]**	2
5	Write a note on status flag register. Also write the condition under which the flag bits affected. [LJIET] [**NOV2017 OLD]**	7
6	Answer: (1) How many machine cycles are executed by 8085 microprocessor? List down it. (2) How many flags are available in 8085 microprocessor? List down each. (3) List down various segment registers of 8086 microprocessor. [LJIET] [**MAY 2018 OLD]**	3
7	Explain the flag register of the 8085 microprocessor with examples. [LJIET] [**NOV 2017 OLD]**	3
8	What are the addressing capacity of 8085 microprocessor and 8086 microprocessor? [LJIET] [**MAY 2018 OLD]**	3
9	Explain flag register of 8085 microprocessor [LJIET] [**May 2016 OLD]**	7
10	Answer the following questions 1. What is the use of ALE pin in 8085? 2. How much time 8085 will take to execute LDA 16bit instruction if the crystal frequency is 4MHz. 3. List down various segment registers of 8086 microprocessor [LJIET] [**MAY 2019 OLD]**	3
11	List the four operations commonly performed by the MPU. [LJIET][**NOV 2018 OLD]**	4
12	Explain 8085 Programming Model and Flag Register. [LJIET][**NOV 2018 OLD]**	7
13	Discuss the programming model of 8085 µP with the help of suitable diagram. [LJIET] **[DEC 2019 OLD]**	4
14	Explain 8085 Programming Model and Flag Register [LJIET] **[DEC 2019 OLD]**	7
15	Describe the format of a flag register of the 8085 microprocessor with its use. [LJIET] [**DEC 2021 OLD]**	3
16	List and explain the segment registers of 8086 microprocessor. [LJIET] [**NOV 2021 NEW]**	3
17	Explain 8085 Programming Model and Flag Register. [LJIET] [**NOV 2021 NEW]** Explain 8085 Programming Model. [LJIET] **[SEP 2021 OLD]**	7,3
18	What is the difference between Latch and Buffer? [LJIET] **[SEP 2021 OLD]**	4
19	Draw and explain flag register of 8085 microprocessor. [LJIET]**[JAN 2023 OLD]**	3
20	What are the states of the Auxiliary Carry (AC), Carry (CY), sign(S) and parity (P) flags after executing the following 8085 program? MVI L, 5DH MVI A, 6BH ADD L [LJIET]**[DEC 2022 NEW]**	3
21	Explain 8085 Programming model and classify instruction set on the basis of different addressing	4

	modes. [LJIET]**[DEC 2022 NEW]**	
22	What are the states of the Auxiliary Carry (AC), Carry (CY), sign(S) and parity (P) flags after executing the following 8085 program? MVI A, A9H MVI B, 57H ADD B ORA A [LJIET]**[DEC 2022 NEW]**	3
23	Explain One byte, Two byte, Three byte and write short note on different types of instruction sets. [LJIET]**[DEC 2022 NEW]**	4
24	What is a flag Register? Enlist and explain various types of flags. [LJIET]**[DEC 2022 NEW]**	7
25	Explain the flag register in 8085 microprocessor. [LJIET]**[JUN 2022 NEW]**	3

	UNIT 3 **8085 MICROPROCESSOR ARCHITECTURE**	
	TOPIC:8085 ARCHITECTURE	
Sr. no	**DESCRIPTIVE QUESTIONS**	**Marks**
1	Sketch the architectural block of 8085 microprocessor and explain each block in short.[LJIET] [**DEC 2012 OLD, DEC 2011 OLD, MAY2015 OLD, DEC 2010 OLD, DEC 2015 OLD, MAY2016 OLD JUN 2017 OLD]**	7
2	Draw the internal block diagram of microprocessor 8085 and explain the working of(i) Program Counter register (ii) Flag register with Bit significance.[LJIET] [**JUN 2013 OLD]**	7
3	Explain 1)ALU 2)PC 3)Instruction DECoder [LJIET] [**DEC 2011 OLD]**	3
4	Draw and explain the block diagram of 8085 microprocessor architecture. [LJIET] [**NOV 2017 OLD]**	7
5	Answer the following: (i) Why is data bus bidirectional in 8085? (ii) Why Program Counter and Stack Pointer registers are 16-bits? [LJIET] [**NOV 2017 OLD]**	7
6	Draw and explain the internal block diagram of 8085 microprocessor. [LJIET] [**MAY 2018 OLD , MAY 2019 OLD , MAY 2019 OLD, JUN 2022 OLD]**	7
7	Draw the functional block diagram of 8085 microprocessor & explain in Brief. [LJIET][**May 2016 OLD]**	7
8	Draw and Explain the functional block diagram of internal architecture of 8085 and explain its working. [LJIET] **[DEC 2019 OLD]**	7
9	Draw the functional block diagram of internal architecture of 8085 microprocessor and explain its working.[LJIET]**[JAN 2022 OLD]**	
10	Draw the internal architectural block diagram of 8085 microprocessor and explain working of each block of 8085 in brief.[LJIET]**[FEB 2021 OLD]**	
11	Draw and Explain the pin diagram of 8085 microprocessor. [LJIET] **[DEC 2019 OLD]**	7
12	List and specify the various features of microprocessor, memory and I/O devices including concepts of system bus. [LJIET] **[DEC 2019 OLD]**	7
13	Sketch and explain the internal block diagram of 8085. [LJIET] [**DEC 2021 OLD]**	7
14	Differentiate 8085 microprocessor with 8086 microprocessor. [LJIET] [**NOV 2021 NEW]**	3
15	Draw and explain the block diagram of a microprocessor 8085.[LJIET][DEC 2022 NEW]	7
16	Draw the block diagram of internal architecture of 8085 and explain its working. [LJIET]**[JUN 2022 NEW]**	7
	TOPIC:REGISTER SECTION	
Sr. no	**DESCRIPTIVE QUESTIONS**	**Marks**
1	Why Program Counter and Stack Pointer are registers 16-bits? [LJIET] [**DEC 2015 OLD]**	3

2	Write a note on a general purpose & special purpose registers of 8085.[LJIET] [**DEC 2012 OLD]**	7
3	Write a note on status flag register. Also write the condition under which the flag bits affected.[LJIET] [**DEC 2012 OLD]**	7
4	What is the purpose of temporary registers W and Z in 8085 microprocessor?[LJIET] [**JUN 2014 OLD]**	2
	TOPIC:8085 PIN FUNCTION	
Sr. no	**SHORT QUESTIONS**	**Marks**
1	Explain the use of READY pin of an 8085 microprocessor [LJIET] [**DEC 2016 OLD]**	1
2	How many flags are available in an 8085 microprocessor ? state the importance of an auxiliary carry flag [LJIET] [**DEC 2016 OLD]**	1
3	What is the function of ALE pin [LJIET] [**MAY 2017 OLD]**	1
4	State the importance of X1 and X2 pins of an 8085 microprocessor [LJIET] [**DEC 2016 OLD]**	1
5	What is the function of ALE pin in 8085? [LJIET] [**JUN 2014 OLD]**	1
6	What is the purpose of HOLD and HLDA pin in 8085 microprocessor?? [LJIET] **[JUN 2014 OLD]**	1
7	Specify the crystal frequency required for an 8085 system to operate at 1.1Mhz [LJIET] [**NOV 2016 OLD]**	1
Sr. no	**DESCRIPTIVE QUESTIONS**	**Marks**
1	Explain the use of HOLD and HLDA pins of 8085 microprocessor. [LJIET] [**DEC 2015 OLD]**	2
2	Explain the following pin function of 8085 ALE,READY,X1-X1,CLKOUT [LJIET] [**JUN 2012 OLD]**	3
3	Explain 1)ALE 2)HOLD 3)SID 4)READY 4)TRAP [LJIET][**JUN 2010 OLD]**	4
4	Explain (i) Ready (ii) INTR (iii) ALE [LJIET] [**DEC 2011 OLD]**	3
5	Some of the pins of 8085 are listed below .For each pin show whether it is an input line or an output line and mention its function. (1) ALE (2) SOD (3) IO/ $\overline{M}$ (4) READY (5) HOLD (6) $\overline{RD}$ [LJIET] [**DEC 2013 OLD]**	7
6	Using diagram illustrate logic pin out of the 8085 Microprocessor. [LJIET] [**JUN 2011 OLD]**	7
7	Explain following pin functions of 8085. ALE, READY, X1 and X2, CLKOUT [LJIET] [**JUN 2012 OLD]**	7
8	Explain the Functions of the following pins of Microprocessor 8085 I) ALE (ii) S0, S1 (iii) INTR, INTA (IV) SID, SOD**. [JUN 2013 OLD]**	7
9	Draw the functional block diagram of IC 8085 and explain its working. [LJIET] [**MAY 2016 OLD]**	7
10	Explain the function of following pins of 8085 microprocessor READY 2) S1 and S0 3)HLDA 4) RESET OUT [LJIET] [**NOV 2016 OLD]**	3
11	Explain the following pins of the 8085 microprocessor: IO/M, INTR,RESETIN [LJIET] [**NOV 2017 OLD]**	3
12	Explain the following pins of the 8086 microprocessor: TEST,LOCK,/MNMX [LJIET] [**NOV 2017 OLD]**	3
13	Draw and explain the block diagram of 8085 microprocessor architecture. [LJIET] [**MAY 2018 OLD]**	7
14	Draw and Explain the functional Block diagram of 8085 microprocessor. [LJIET][**NOV 2018 OLD]**	7
15	Define: (i) RESET OUT (ii) HLDA (iii) READY (iv) HOLD (v) ALE (vi) INTR (vii)TRAP [LJIET] [DEC 2019 OLD]	7
16	Explain the role of clock in Microprocessor [LJIET] [DEC 2019 OLD]	3
17	Explain following pins of an 8085 microprocessor in brief: 1. ALE 2. TRAP 3. READY 4.	4

	HLDA [LJIET] [**NOV 2021 NEW]**	
18	Define following terms. 1) Positive logic 2) Operand 3) ALE 4) Control word 5) Machine Cycle 6) Opcode 6) Stack[LJIET]**[JAN 2022 OLD]**	7
19	Explain following pin functions of 8085: 1) ALE 2) READY 3) CLKOUT[LJIET]**[FEB 2021 OLD]**	3
20	Explain the following pins of the 8085 microprocessors: X1-X2, INTR, RESET OUT[LJIET] **[SEP 2021 OLD]**	3
21	Draw the Pin Diagram of 8085 microprocessor. Explain important pins used for interfacing with the memory and peripherals. [LJIET] **[SEP 2021 OLD]**	4
22	Explain following instructions of 8085. .[LJIET]**[JAN 2023 OLD]**	4
23	Draw the functional block diagram of internal architecture of IC 8085.[LJIET]**[JAN 2023 OLD]**	7
24	Describe the functions of (1) READY PIN (2) ALE (3) HOLD (4) X1 and X2 (5) SID and SOD (6) IO/M 22. (7) HLDA [LJIET]**[DEC 2022 NEW]**	7
25	1. Explain the use of READY pin of an 8085 microprocessor 2. State the importance of an auxiliary carry (AC) flag. 3. What is the difference between ANA and ANI instructions? 4. State various types of registers available in programmable interrupt controller (8259) [LJIET]**[JUN 2022 OLD]**	4
26	Explain the following pins of 8085: (1) INTR (2) HOLD (3) SOD (4) READY [LJIET]**[JUN 2022 NEW]**	4
	TOPIC:DEMULTIPLEXING OF BUSES	
Sr. no	**DESCRIPTIVE QUESTIONS**	**Marks**
1	What demultiplexing? How it is done in microprocessor 8085 for address and data bus? Explain with neat diagram.[LJIET] [**JUN 2013 OLD, JUN 2014 OLD JUN 2017 OLD]**	7
2	Explain with a sketch how demultiplexing of AD bus takes place .[LJIET] [**DEC 2012 OLD]**	7
3	Explain how address/data lines AD0-AD7 are de-multiplexed. [LJIET] [**JUN 2014 OLD NOV 2016 OLD]**	4
4	How will the multiplexed address/data bus (AD0-AD7) of the 8085 microprocessor be demultiplexed? [LJIET**] [NOV 2017 OLD]**	4
5	How address and data lines AD0-AD7 of 8085 is demultiplexed? Draw the diagram of generation of control signals in 8085.[LJIET] [**MAY 2018 OLD MAY 2019 OLD]**	7
6	Describe the De-multiplexing of address bus in 8085.[LJIET] [**May 2016 OLD]**	7
7	Explain the De multiplexing the Bus AD7-AD0 and also explain the generation of the Control signals. [LJIET] **[DEC 2019 OLD]**	7
8	Explain demultiplexing of data and address bus of 8085. [LJIET]**[JUN 2022 NEW]**	4
	TOPIC:GENERATION OF TIMING & CONTROL SIGNALS	
Sr. no	**DESCRIPTIVE QUESTIONS**	**Marks**
1	Draw schematic to generate read/write control signals for memory and input/output of 8085 microprocessor. [LJIET] [**DEC 2014 OLD NOV 2016 OLD]**	7
2	Draw logic diagram to generate control signals MEMW, MEMR, IOW and IOR from IO/M,WR and RD. [LJIET] [**JUN 2014 OLD]**	7
3	What are the control signals how do we generate them give the importance [LJIET] [**JUN 2012**	4

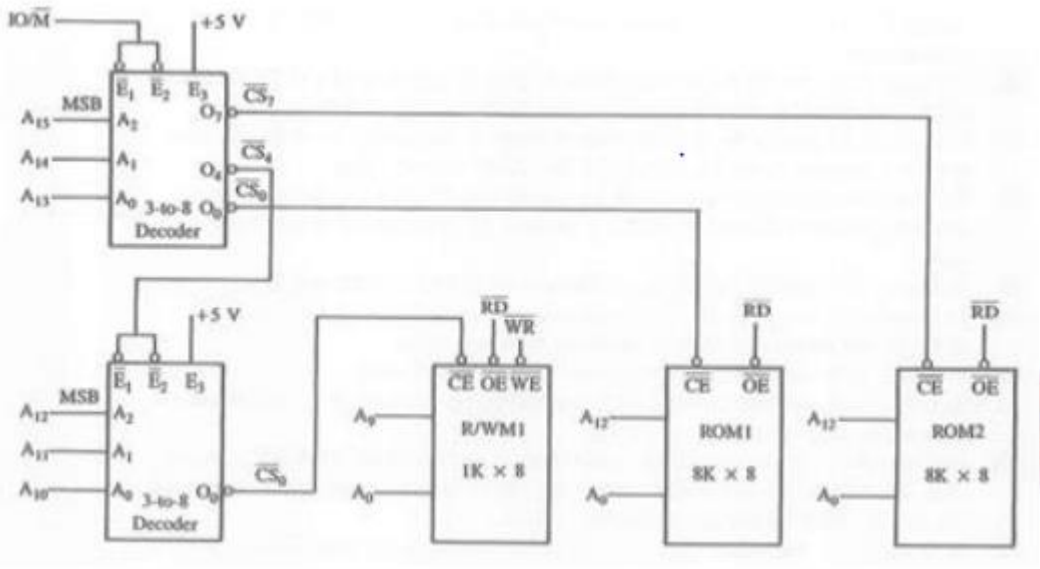
	OLD] What are the control signals? How do we generate them? Give their importance.[LJIET] **[FEB 2021 OLD]**	
4	Explain the generation of control signals in 8085. [LJIET]**[JUN 2022 NEW]**	4
	TOPIC : TIMING DIAGRAM	
Sr. no	**SHORT QUESTIONS**	**Marks**
1	Name the type of machine cycles executed by 8085 microprocessor[LJIET][**MAY 2017 OLD]**	1
2	How much time will be required to execute the STAX B instruction if the clock frequency is 4 MHz? [LJIET] **[JUN 2014 OLD]**	1
3	What will be duration of 1 T state if 4 MHz crystal is connected with 8085 microprocessor? [LJIET] **[JUN 2014 OLD]**	1
4	State the difference between opcode fetch (OF) and memory read (MR) cycles. [LJIET] **[DEC2015 OLD]**	1
Sr. no	**DESCRIPTIVE QUESTIONS**	**Marks**
1	Explain T-state, Machine Cycle and Instruction Cycle [LJIET] [**DEC 2011, JUN 2014 OLD]**	4
2	Explain the diagram of the memory write cycle. [LJIET] [**JUN 2011 OLD]**	3
3	In instruction requires three machine cycles and 10T states for the execution explain using timing diagram sequence of events taking place in each machine cycle with reference 3000H …IN 05H [LJIET] [**Jun 2010 OLD]**	7
4	What is instruction cycle? Explain using waveforms the fetch & execute cycle with reference of clock .[LJIET] [**DEC 2012 OLD]**	7
5	Illustrate the steps and the timing of data flow when the instruction code 0100 1111 (4FH –MOV C, A), stored in location 2005H, is being fetched.[LJIET] [**JUN 2011 OLD]**	7
6	Sketch & explain the timing waveforms for a fetch operation.[LJIET][**DEC 2012 OLD]**	7
7	Draw the timing diagram of the instruction: LXI B, 2100H. Explain all the stages of instruction execution. [**DEC 2015 OLD]**	7
8	Draw and explain the timing diagram of instruction MVI A, 32H. Find execution time required, if clock frequency is 2MHz. [LJIET] [**DEC 2011 OLD, MAY 2015 OLD]**	7
9	How many machine cycles are required to execute LDA 3050h instruction? Draw complete timing diagram with each machine cycle and briefly explain it.[LJIET] [**JUN 2012 OLD]**	7
10	Explain the execution of STA 3000H instruction using Timing diagram.[LJIET][**JUN 2013 OLD MAY 2019 OLD]**	7
11	Draw the timing diagram for the instruction STA 3050 H and explain in detail. If the processor clock is 3 MHz calculate the time required to execute the instruction. [LJIET][**MAY 2015 OLD]** Explain the execution of the instruction STA 3060H with neat timing diagram.[LJIET]**[JAN 2022 OLD]**	7
12	STA instruction requires 5 machine cycles and 13T states. Explain using timing diagram sequence of events taking place in each machine cycle with reference to 3000H STA 4000H instruction.[LJIET] [**DEC 2013 OLD]**	7
13	Explain T-state, Machine cycle and Instruction cycle. Draw timing diagram of OUT FFh instruction. [LJIET] [**JUN 2014 OLD]**	7
14	What is instruction cycle ? explain using waveform the fetch and execute cycle with reference of clock [LJIET] [**DEC 2012 OLD]**	7
15	Define T-state, machine cycle and instruction cycle. Draw the timing diagram for the instruction IN AA h. [LJIET] [**MAY 2015 OLD]**	7
16	Explain the execution of the instruction STA 2050H with neat timing diagram.[LJIET] [**DEC 2010 OLD, FEB 2021 OLD]**	7

17	How many machine cycles are required to execute MVI A,32H instruction? Draw complete timing diagram with each machine cycle and find execution time for instruction with assume clock freq. 2Mhz [LJIET] [**MAY 2016, MAY 2017 OLD]**	7
18	How many machine cycles are required to execute MOV r,M instruction ? Draw complete timing diagram [LJIET] [**MAY 2016 OLD]**	7
19	Define terms: T-state , machine cycle. How many machine cycles and Tstates will be required to execute the LHLD instruction [LJIET] [**DEC 2016 OLD]**	3
20	Draw the timing diagram of MOV M,B instruction of an 8085 microprocessor [LJIET] [**DEC 2016 OLD]**	4
21	Assume that ROM location 201AH contains instruction MOV C, A having opcode 4FH. Draw and explain timing diagram for opcode fetch machine cycle of this instruction.[LJIET] [**DEC 2014 OLD]**	7
22	Identify control signals for the forth machine cycle of the instruction STA 4000H and explain forth machine cycle with neat timing diagram [LJIET] [**NOV 2016 OLD]**	7
23	For instruction IN 05H explain sequence of events taking place in each machine cycles using timing diagram. For illustration consider instruction is stored in memory locations 2070H and 2071H. [LJIET] [**NOV 2016 OLD]**	7
24	Explain the execution of STA 3000H instruction using Timing diagram. [LJIET] [**NOV 2017 OLD]**	7
25	Draw the timing diagram of OUT 50h instruction of the 8085 microprocessor. . [LJIET] [**NOV 2017 OLD]**	4
26	Draw and explain timing diagram of instruction MOV C,A stored in location 2005H,and its opcode is 4F H [**MAY 2018 OLD]**	7
27	Draw and explain timing diagrams of Memory Read and Memory Write cycle. [LJIET] [**MAY 2018 OLD MAY 2019 OLD]** Explain the timing diagram of the memory write cycle[LJIET] **[JAN 2022 OLD]**	7
28	Draw timing diagram for an arithmetic instruction: MOVE A, B. [LJIET] [**MAY 2018 OLD]**	3
29	Draw the timing diagram for the instruction MVI A, 32H at memory location 2000H and 2001H [LJIET] [**May 2016 OLD]**	7
30	Draw the timing diagram of MVI A, 8bit instruction of 8085 microprocessor. [**May 2019 OLD]**	3
31	List the sequence of events that occurs when the 8085 MPU reads from memory. [LJIET][**NOV 2018 OLD]**	4
32	Identify the machine cycles in the following instructions 1. SUB B 2. ADI 47H 3. STA 2050H 4. PUSH B. [LJIET][**NOV 2018 OLD]**	7
33	Describe basic Machine Cycle used in 8085. Draw Timing Diagram for OUT instruction. [LJIET][**NOV 2018 OLD]**	7
34	Draw and explain timing diagram of Memory Read and Memory Write cycle. [LJIET] **[DEC 2019 OLD]**	7
35	Describe basic Machine Cycle used in 8085. Draw Timing Diagram for OUT instruction [LJIET] **[DEC 2019 OLD]**	7
36	Define the terms: Instruction cycle, Machine cycle and T-state [LJIET] [**DEC 2021 OLD]**	3
37	Draw the timing diagram of MVI A, 32H instruction of an 8085 microprocessor [LJIET] [**DEC 2021 OLD]**	4
38	Define the followings: Machine Cycle, T-state, JC, CMP, RET, SBB, STC [LJIET] [**NOV 2021 NEW]**	7
39	Draw the timing diagram of MOV M, D instruction of an 8085 microprocessor. [LJIET] [**NOV 2021 NEW]**	4
40	State the functions of the following instruction with no. of bytes occupied, no. of machine	4

	cycles, no. of T-states, addressing mode. 1) PUSH PSW 2) XCHG[LJIET] **[FEB 2021 OLD]**	
41	Identify the machine cycles in the following instructions. (1) STA 16 bit (2) CALL 16 bit (3) JNZ 16 bit[LJIET] **[SEP 2021 OLD]**	7
42	Explain different types of MOV instructions of 8085 with an example. [LJIET] **[JAN 2023 OLD]**	3
43	Draw the timing diagram of STA 2000H instruction of an 8085 microprocessor. [LJIET] **[JAN 2023 OLD]**	7
44	2100 LXI H, 1234H MVI A, 55H ADD M What is the size of ADD M instruction? Name the machine cycles. Draw machine cycle and T-state diagram and specify the content of address bus, data bus and control signals *RD, *WR, IO/*M and ALE signals and status signals S1 and S0 for every T states of ADD M instruction only. [LJIET]**[DEC 2022 NEW]**	7
45	Specify the addressing mode, required Machine cycles, T-States and function for following instructions : 1. MVI M, 45H 2. RAL LHLD 2300H [LJIET]**[DEC 2022 NEW]**	7
46	Explain the functions of following instructions of 8085 – state the bytes occupied, number of Machine cycle required and T-States 1. ORA B 2. LDA 2000H [LJIET]**[JUN 2022 OLD]**	3
47	Draw the timing diagram of IN 80h instruction of the 8085 microprocessor. [LJIET]**[JUN 2022 OLD]**	3
48	Explain the timing diagram of the instruction MOV C,A (4FH) stored in location 2005H is being fetched. Define T-state, Machine cycle and Instruction cycle. [LJIET]**[JUN 2022 NEW]**	7
	TOPIC:MEMORY INTERFACING	
Sr. no	**SHORT QUESTIONS**	**Marks**
1	If the memory chip size is 1024 X 4 bits, how many chips are required to make up 2K bytes of memory? [LJIET] [**DEC 2015 OLD, MAY 2015 OLD]**	1
2	The memory address of last location of a 1k byte chip is given by FBFF. Specify the memory map. [LJIET] [**JUN 2010 OLD]**	1
3	The memory map of a 4K byte memory chip begins at the location 2000 H. Specify the	1

	address of the last location on the chip and the number of pages on the chip.[LJIET] **[DEC 2015 OLD]**	
4	What operations can be performed by using the following instructions? ADD A b) XRA A [LJIET] [**MAY 2015 OLD]**	1
5	The memory address of the last location of an 8K byte memory chip is FFFF H. Find the starting address. [LJIET] [**DEC 2015 OLD]**	1
6	If the memory chip size is 2048 X 4 bits, how many chips are required to make up 16K memory ? [LJIET] [**NOV 2016 OLD]**	1
7	The memory map of memory chip begins at the location C000H and ends at location FFFFH. How many address lines are required for the chip? [LJIET] [**NOV 2016 OLD]**	1
Sr. no	**DESCRIPTIVE QUESTIONS**	**Marks**
1	Design a memory system that contains 2K bytes of EPROM immediately followed by 1K byte of RWM. The EPROM starts at address 0000H and It is implemented by using 1K byte of EPROM. The RWM is implemented using 1k byte RAM chips used DECoder and gates for the interfacing circuit [LJIET] [**JUN 2010 OLD]**	7
2	Answer the following questions.1)how many address lines are necessary on the chip of 2K byte memory 2)if the memory chip sizes 1024x4 bits how many chips are required to make a 2k bytes of memory 3)the memory map of 4K byte memory chip begins at the location 200h specify the address of the last location on the chip and the number of pages on the chip 4)the memory address of the last location of 8k byte memory chip is FFFF H. find the starting address . [LJIET] [**DEC 2010 OLD]**	7
3	Explain Linear select DECoding. Compare it with Absolute DECoding.[LJIET] [**DEC 2013 OLD]**	7
4	Explain following terms (i) absolute DECoding (ii) Write control signal (iii) handshake signal [LJIET] [**DEC 2011 OLD]**	3
5	Design an 8085 microprocessor system such that it should contain 16Kbyte of EPROM and 4KByte of RAM with starting addresses 0000H and 4000H respectively. Use two 8KByte of EPROMs (2764) and two 2KByte of RAMs [LJIET] [**DEC 2015 OLD]** (6116) for this system	7
6	Interface 8K of EPROM and 4K of RAM with 8085 microprocessor. EPROM memory address begins at 0000H and RAM address begins at 8000H. Write memory address ranges used for EPROM and RAM in your design. [LJIET] [**DEC 2014 OLD]**	7
7	Design a memory interfacing circuit for a given 4k ROM chip. Use all 16 address line. Use any combination of inverter, NAND gate and 74LS138 DECoder to generate the address. Determine the memory map of the design. [LJIET] [**DEC 2011 OLD]**	7
8	Interface 8K EPROM and 4K RAM with 8085 processor. Write address range for both the memory chips and also show the address DECoding logic. [LJIET] [**MAY 2015 OLD]**	7
9	Draw the diagram for interfacing 8KB of ROM and 8KB of RAM with microprocessor 8085 and also explain the number of pins used for such interfacing. The starting address for ROM should be 0000H and starting address for RAM should be 8000H.[LJIET][**JUN 2013 OLD ,MAY 15 OLD]**	7
10	Explain circuit diagram of interfacing of 8K EPROM and 4K RAM with 8085. Write address range for both the memory chips showing address DECoding logic [LJIET] [**JUN 2014 OLD]**	7
11	Given the components as listed, design an interfacing circuit for the memory to meet the following specifications: (1)74LS138: 3-to-8 DECoder (2)2732 (4K X 8): EPROM—address range should begin at 0000H. (3)6116 (2K X 8): CMOS R/W memory.[LJIET] [**DEC 2010 OLD]**	7
12	Draw interfacing of a 4K EPROM having a starting address 2000H with 8085 microprocessor. Use demultiplexed address/data lines and 3-8 DECoder (74LS138) [LJIET]	3

	[**MAY 2017 OLD]**	
13	Draw the interfacing of a 2K EPROM having an ending address 0FFFh with 8085 microprocessor . Use demultiplexed address/data lines and 3-8 DECoder(74LS138)[LJIET] [**DEC 2016 OLD]**	3
14	Compare absolute DECoding with partial DECoding [LJIET][**JUN 2017 OLD]**	3
15	What is difference between absolute DECoding and partial DECoding? Design an interfacing circuit for the memory system to meet the following specifications: 1) 1K byte R/W memory- address range should begin at 4000H 2) 8K byte ROM 1 – address range should begin at 0000H 3) 8K byte ROM 2 – address range should begin at E000H [LJIET] [**NOV 2016 OLD]**	7
16	Design an interfacing circuit to connect 4KX8 EPROM with starting address from 0000H and 2KX8 RAM starting address 2000H onwards [LJIET][**JUN 2017 OLD]**	7
17	Explain circuit diagram of interfacing of 8K EPROM and 4K RAM with 8085. Write address range for both the memory chips showing address DECoding logic [LJIET][**NOV 2017 OLD]**	7
18	Draw the interfacing of a 4KB EPROM having a starting address 2000h and two 2KB static RAMs having starting addresses 4000h and 8000h, respectively, with 8085 microprocessor. Use demultiplexed address/data lines and use 3-to-8 DECoder (74LS138). [LJIET][**NOV 2017 OLD]**	7
19	Consider a system in which 32kb memory space is implemented using four numbers of 8kb memory. Interface the EPROM and RAM with 8085 processor. Write address range for both chips showing address DECoding logic.[LJIET] [**MAY 2018 OLD]**	7
20	Draw the interfacing of a 4KB EPROM having a starting address 2000h and two 4KB static RAMs having starting addresses 4000h and 8000h, respectively, with 8085 microprocessor. Use demultiplexed address/data lines and use 3-to-8 decoder (74LS138) .[LJIET] [**MAY 2019 OLD]**	4
21	Specify the number of registers and memory cells in a 128 × 4 memory chip. [LJIET][**NOV 2018 OLD]**	3
22	Calculate the address lines required for 8K-byte memory chip [LJIET] **[DEC 2019 OLD]**	3
23	Calculate the number of memory chips needed to design 8K-byte memory if the memory chip size is 1024*1. [LJIET**] [DEC 2019 OLD**]	3
24	Interface 4K EPROM and 16K RAM with 8085 processor. Write address range for both the memory chips and also show the address decoding logic. [LJIET**] [JAN 2022 OLD]**	7
25	Answer the followings: 1. How many address lines are necessary on the chip of 2K byte memory? 2. The memory address of the last location of an 8K byte memory chip is FFFF H. Find the starting address. 3. Why program counter and stack pointer is a 16 bit register? [LJIET**] [FEB 2021 OLD]**	3
26	Draw the interfacing of a two 4KB static RAMs having starting addresses 8000h, with 8085 microprocessors. Use minimum number of interfacing chips for the design. [LJIET] **[SEP 2021 OLD]**	4
27	Draw the interfacing of a 4KB EPROM having a starting address 2000h and two 4KB static RAMs having starting addresses 4000h and 8000h, respectively, with 8085 microprocessors. Use demultiplexed address/data lines and use 3-to-8 decoder (74LS138). [LJIET**][JUN 2022 OLD]**	7
28	Explain interfacing of 4KB EPROM with 8085 using decoder and gates as required. Assume starting address as 0000H. [LJIET**][JUN 2022 NEW]**	7

29	 Specify the memory map of ROM1, ROM2 and R/WM1 in the above figure. Eliminate the second decoder in above figure and connect CS4 to CE of R/WM1 and then identify memory map and fold-back space [LJIET]**[JUN 2022 OLD]**	7
30	How many memory locations can be addressed by microprocessor with 14 address lines? Also specify how many address lines are required for 2KB memory. [LJIET]**[JUN 2022 NEW]**	3

	UNIT 4: INTRODUCTION TO PROGRAMMING	
	TOPIC:ADDRESSING MODES	
Sr. no	**DESCRIPTIVE QUESTIONS**	**Marks**
1	What do you understand by the term Addressing Modes? Explain addressing modes of 8085 microprocessor with example. [LJIET] **[JUN 2011, DEC 2011, DEC 2013 OLD MAY 2019 OLD]** List and explain 8085 addressing modes with suitable example.[LJIET] **[FEB 2021 OLD]**	4,7
2	What is a program format? Illustrate with an example.[LJIET] [**DEC 2012 OLD]**	7
3	Explain the different addressing modes available in 8085 assembly language programming with example.[LJIET][**JUN 2013 OLD, DEC 2015 OLD,]**	7
4	Describe various addressing modes of 8085 microprocessor with examples [LJIET] [**MAY 2017 OLD JUN 2017 OLD]**	3
5	Explain the Addressing modes of 8085 by giving suitable examples. .[LJIET][**NOV 2017 OLD]**	7
6	What is addressing mode? Explain all addressing modes of 8085 processor [LJIET] [**MAY 2018 OLD]**	7
7	Explain various addressing modes of 8085 microprocessor. [LJIET] [**MAY 2018 OLD]**	7
8	Discuss various addressing modes with suitable Examples.[LJIET] [**May 2016 OLD]**	7
9	Define opcode and operand, and specify the opcode and the operand in the instruction MOV H, L. [LJIET][**NOV 2018 OLD]**	3
10	Define addressing mode? State the addressing modes of the following instructions 1. MOV A, B 2. LDA 2500H 3. ANA M. [LJIET][**NOV 2018 OLD]**	4
11	Explain 8085 Programming model and classify instruction set on the basis of different addressing modes. [LJIET][**NOV 2018 OLD]**	7
12	Describe the different types of instruction sets. [LJIET] [DEC 2019 OLD]	4
13	Discuss various types of addressing modes of 8085. [LJIET] [**DEC 2019 OLD NOV 2021 NEW, DEC 2022 NEW]**	7,3

14	Explain various addressing modes of 8085 microprocessor with examples. [LJIET] [**DEC 2021 OLD]**	7
15	What are the advantages of an assembly language in comparison with high level languages? [LJIET**][DEC 2022 NEW]**	4
16	Explain different addressing modes of 8085 with an example of each.[LJIET] **[SEP 2021 OLD]**	7
17	List and explain 8085 addressing modes with suitable example.[LJIET] **[FEB 2021 OLD]**	7
18	List different addressing modes of programing instruction of 8085 microprocessor. Also explain them with a suitable example.[LJIET] **[JAN 2022 OLD]**	7
	TOPIC:INSTRUCTION SET	
Sr. no	**SHORT QUESTIONS**	**Marks**
1	Why does opcode fetch cycle need 4T state although it is similar to memory read cycle [LJIET] [**JUN 2012 OLD]**	1
2	Explain the CMP instruction with the help of an example.[LJIET] [**DEC 2015 OLD]**	1
3	How many instruction codes can be generated by an 8085 microprocessor? why ? [LJIET] [**DEC 2016 OLD]**	1
4	Explain the PCHL instruction of an 8085 microprocessor with example [LJIET][**DEC 2016 OLD]**	1
5	What will be done if OUT 50h instruction is executed? [LJIET][**MAY 2017 OLD]**	1
6	Explain the STA instruction of the 8085 microprocessor with example [LJIET][**MAY 2017 OLD]**	
7	What is deference between ORA and ORI instructions? [LJIET] [**MAY 2017 OLD]**	1
8	Write any two 1 byte instruction to load 00H into A [LJIET] [**NOV 2016 OLD]**	1
Sr. no	**DESCRIPTIVE QUESTIONS**	**Marks**
1	What is an assembler? [LJIET][**JUN 2014 OLD]**	2
2	Explain (i)CMA (ii) RRC (iii) RET.[LJIET] [**DEC 2011 OLD]**	3
3	Explain need and list of branching instruction in 8085 .[LJIET] [**DEC 2011 OLD]**	3
4	Explain opcode .[LJIET] [**DEC 2011 OLD]**	3
5	How many machine cycles are required to execute LDA 3050H instruction ? draw the complete timing diagram with each machine cycle and briefly explain it [LJIET] [**JUN 2012 OLD]**	7
6	Working of rotate instructions of 8085 with proper example in each case [LJIET] [**JUN 2012 OLD],[MAY 2018 OLD]**	7
7	Distinguish between following pairs of the instructions. 1)LXI H,1234H and LHLD 1234H (2) RAL and RLC (3) JMP 1000H and CALL 1000H [LJIET] [**DEC 2013 OLD]**	7
8	Write short note on (i) Serial I/O lines ,SOD and SID (ii) Comparison between memory map I/O and I/O map I/O. [LJIET] [**DEC 2011 OLD]**	**7**
9	List and Explain categories of 8085 instructions that manipulate data.[LJIET] [**JUN2011 OLD]**	7
10	List and Explain categories of 8085 instructions that deal with data transfer.[LJIET][**MAY 2015 OLD]**	7
11	Explain following instructions with no. of bytes, machine cycles and T-states required for execution: 1. LHLD 2. RAR 3. XTHL 4. ADI [LJIET] [**DEC 2015 OLD]**	7
12	Explain the following instructions of microprocessor 8085: (i) LHLD (ii) DAD (iii) DAA.[LJIET] [**JUN 2013 OLD]**	6
13	State the function of following instructions : 1)LHLD 16bit 2)PUSH PSW 3)DAD H 4)RIM 5)XCHG 6)XTHL 7)PCHL 8)STC [LJIET]	7

	[DEC 2010 OLD]	
14	State the functions of the following instruction.1) PUSH PSW 2) LHLD 1000h 3) RAL 4) PCHL 5) DAD .[LJIET] [**MAY 2015 OLD, JUN 2010 OLD]**	7
15	State the functions of the following instruction.1) PUSH PSW 2) XCHG 3) PCHL 4) XTHL 5) SIM 6) DAA 7) LHLD .[LJIET] [**JUN 2010 OLD]**	7
16	Explain following instructions:[1] LDAX D [2] DAD B [3] XCHG [4] XRA D [5] EI [6] DAA [7] PCHL.[LJIET] [**JUN 2014 OLD, DEC 2015 OLD]**	7
17	Write instruction format and explain with the help of appropriate example showing contents of registers/memory locations before and after execution of the instruction. (i) STAX (ii) DAD [LJIET] [**DEC 2014 OLD]**	7
18	Write instruction format and explain with the help of appropriate example showing contents of registers/memory locations before and after execution of the instruction. (i) LDAX (ii)DAA[LJIET] [**DEC 2014 OLD]**	**7**
19	Explain RIM and SIM instructions.[LJIET] **JUN 2010 DEC 2013 MAY 15 DEC 2015 MAY 2016 OLD MAY 2019 OLD]**	7
20	List and explain categories of 8085 instructions that deals with data transfer. [LJIET] [**MAY 2016 OLD]**	7
21	Explain the working of rotate instructions of 8085 with proper example in each case. [LJIET] [**MAY 2016 OLD]**	7
22	Explain working of rotate instruction of 8085 with proper example [LJIET][**MAY 2016 OLD]**	7
23	Explain DAA and LDA instructions of the 8085 microprocessor with examples[LJIET] [**MAY 2017 OLD]**	3
24	Point out the valid and invalid instructions. Correct the invalid ones. MVI AB,LDA BD,MOV 05, ANI 0B, MOV H,L , LDAX B, STA C000 [LJIET] [**DEC 2012 OLD]**	7
25	Describe the operation of the following instructions of 8085 with example. 1) DI 2) LHLD SPHL [LJIET] [**NOV 2016 OLD]**	2
26	Write the addressing mode for the following instructions of 8085 1) JMP 2070 2) STAX B 3) LDA 3000H ADD M [LJIET] [**NOV 2016 OLD]**	2
27	State the function of following instructions. (1) LHLD 16-bit (2) PUSH PSW (3) DAD H (4) RIM (5) XCHG (6) XTHL (7) PCHL] [LJIET][**NOV 2017 OLD]**	7
28	Explain the following instructions of the 8085 microprocessor with suitable example: STA, LDAX, XTHL [LJIET] [**NOV 2017 OLD]**	7
29	Explain 8085 data transfer instructions with suitable examples. [LJIET] [**MAY 2018 OLD]**	7
30	Explain 8085 branch instructions with suitable examples. [LJIET] [**MAY 2018 OLD]**	7
31	List out various arithmetical and logical instruction of 8085 microprocessor. Explain any two with suitable example.[LJIET] [**May 2016 OLD]**	7
32	What is conditional &unconditional branching? Illustrate the answer with suitable example.[LJIET] [**May 2016 OLD]**	7
33	Explain the functions of following instructions of 8085 – state its number of bytes occupied, number of Machine cycle required and Tstates. 1. MOV A,M 2. LXI H,1000H 3. DAA 4. IN 80H.[LJIET] [**May 2019 OLD]**	7
34	Explain following instructions (1) PUSH PSW (5) RIM (2) XCHG (6) STA (3) LDAX (7) RAL (4) DAA.[LJIET] [**May 2019 OLD]**	7
35	List the four categories of 8085 instruction that manipulate data.[LJIET][**NOV 2018 OLD]**	3
36	Explain the functions of following instructions of 8085 – state the bytes occupied, number of Machine	4

	cycle required and T-States 1. LXI H, 2050H 2. MOV B,A 3. STA 5050H 4. ADD C.[LJIET][**NOV 2018 OLD]**	
37	State the function of following instructions: (1) LHLD 16-bit (2) PUSH PSW (3) DAD H (4) RIM (5) XCHG (6) XTHL (7) PCHL [LJIET] [DEC 2019 OLD]	7
38	Explain the function of RIM and SIM instructions in 8085 [LJIET] [DEC 2019 OLD]	7
39	Explain One byte, Two byte, Three byte instruction. [LJIET] [DEC 2019 OLD]	4
40	Explain the Functions of following instructions: 1) RAL 2) LDAX 3) ADC [LJIET] [DEC 2019 OLD]	3
41	Explain the Functions of following instructions: 1) RLC 2) LHLD 3) SBB [LJIET] [DEC 2019 OLD]	3
42	Elain following instructions with no. of bytes, machine cycles and T states required for execution: 1. CALL 2. CPI [LJIET] [**NOV 2021 NEW]**	4
43	Explain following instructions with no. of bytes, machine cycles and T states required for execution: 1. SHLD 2. RAL [LJIET] [**NOV 2021 NEW]**	4
44	Write operation of the following instructions (1) LHLD 1000H (2) RAL (3) DAD D (4) PUSH PSW (5)PCHL (6) RIM (7) XTHL[LJIET] [**JAN 2022 OLD]**	7
45	Explain the following instructions of the 8085 microprocessor with suitable example: (1) DAD Rp (2) XCHG (3) SPHL (4) STC[LJIET] **[SEP 2021 OLD]**	7
46	Difference between RLC and RAL instruction. [LJIET]**[DEC 2022 NEW]**	3
47	Explain the following instructions 1. LHLD 2. RAL 3. DAA [LJIET]**[JUN 2022 NEW]**	3
48	Explain arithmetic instructions of 8085. [LJIET]**[JUN 2022 NEW]**	4
	PROGRAMS	
1	Write a program to load two unsigned numbers 42H and 67H respectively in register B and register C. Subtract C from B. if the result is in 2' complement, convert the result in absolute magnitude and display it at PORT1.otherwise display the positive result. [LJIET][**DEC 2011 OLD]**	4
2	Write an Assembly Language Program (ALP) to find the 2's complement of a number stored in Memory location A000 H store the result in B000H.[LJIET] [**JUN 13 OLD]**	4
3	Write and ALP to add two 16 bit numbers Assume that the answer does not generate carry.[LJIET] [**JUN 13 OLD]**	7
4	Write program to add any ten bytes type hexaDECimal numbers. Store the results LSB at 4000H and MSB carries at 4001H [LJIET][**JUN 2017 OLD]**	7
5	Write and ALP to add two 16 bit numbers stored in memory locations starting at XX30 H onwards. Stored the 16 bit results at memory locations XX50 and XX51 H. [LJIET][**NOV 2017 OLD]** Write a program to add two 16 bit number stored in memory location 2000H to 2003H. Store answer in 2050H and 2051H.[LJIET]**[JAN 2022 OLD]**	7
6	Explain the following instructions of the 8085 microprocessor with ssuitable example: LHLD, SPHL, LDAX, XTHL [**MAY 2019 OLD]**	4
7	Write an 8085 Assembly language program to evaluate the Boolean equation D = (B+C) * E, where B, C, E represents data in various registers of 8085.[LJIET][**NOV 2018 OLD]**	4
8	Specify the output at PORT 7 if the following program is executed. MVI B, 82H MOV A, B MOV C, A MVI D, 37H OUT PORT 7 HLT[LJIET][**NOV 2018 OLD]**	3
9	Specify the contents of the registers and flag status as the following instruction are executed. A B C D S Z C Y MVI A,00H MVI D, F8H	3

	MOV B, A ADD D HLT[LJIET][**NOV 2018 OLD]**	
10	Write a programme to perform multiplication of two 8 bit numbers. [LJIET] **[DEC 2019 OLD]**	7
11	Write a programme to find smallest number from an array of data [LJIET] **[DEC 2019 OLD]**	7
12	Write a programme to perform division of two 8 bit number [LJIET] **[DEC 2019 OLD]**	7
13	Write a programme to arrange an array of data in ascending order. [LJIET] **[DEC 2019 OLD]**	7
14	The memory location 2070H holds the data byte F2H.Write instructions to transfer the data byte to the accumulator using three different opcodes: MOV, LDAX, and LDA. [LJIET] **[DEC 2019 OLD]**	4
15	Write assembly language program to do multiplication of two numbers. Specify the memory location of each and every instruction and also draw flow chart [LJIET] **[DEC 2019 OLD]**	7
16	Register D contains 72H.Illustrate the instructions MOV and STAX to copy the contents of register B into memory location 8020H using indirect addressing. [LJIET] **[DEC 2019 OLD]**	4
17	Write assembly language program to do division of two numbers. Specify the memory location of each and every instruction and also draw flowchart. [LJIET] **[DEC 2019 OLD]**	7
18	Write assembly language program to do addition of two 8-bit numbers with carry. Specify the memory location of each and every instruction. [LJIET] **[DEC 2019 OLD]**	7
19	Write assembly language program to count number of 1's in given 8-bit number. Specify the memory location of each and every instruction.[LJIET] **[DEC 2019 OLD]**	7
20	List different types of instructions in 8085 microprocessor. [LJIET] [**DEC 2021 OLD]**	3
21	Distinguish between SIM and RIM instructions of 8085 microprocessor. [LJIET] [**DEC 2021 OLD]**	4
22	Write an 8085 assembly language program to arrange the following numbers in descending order: 29H, 47H, 06H, 03H, 17H. [LJIET] [**NOV 2021 NEW]**	7
23	Write an 8085 assembly language program to arrange the following numbers in ascending order: 29H, 47H, 06H, 03H, 17H. [LJIET] [**NOV 2021 NEW]**	7
24	How does the microprocessor differentiate among a positive number, negative number and a bit pattern? [LJIET**][DEC 2022 NEW]**	3
25	Write a program to find 2's complement of a number stored at 2050H [LJIET**][JUN 2022 NEW]**	3
26	Load the hexadecimal numbers 56H and A9H in registers D and E respectively and add them. If sum is greater than FFH, display 01H at output PORT0; otherwise display sum. [LJIET**][JUN 2022 NEW]**	4
	UNIT 5: **ASSEMBLY LANGUAGE PROGRAMMING**	
Sr. no	**SHORT QUESTIONS**	**Marks**
1	How many time an 8085 microprocessor will take to execute the LXI B, 4000H instruction if the crystal frequency is 4Mhz? [LJIET] [**DEC 2016 OLD]**	1
2	Write the set of 8085 assembly language instruction to store the contents of B and C registers on stack [LJIET] [**MAY 2017 OLD]**	1
3	How much time the 8085 microprocessor will take to execute the MOV B,A instruction, if crystal frequency is 4 Mhz [LJIET] [**MAY 2017 OLD]**	1
Sr. no	**DESCRIPTIVE QUESTIONS**	**Marks**
1	Explain need and list of branching instructions in 8085.[LJIET][**DEC 2011 OLD]**	3
2	Compare (i) Call and jump instruction (ii) serial and parallel data transfer.[LJIET][**DEC 2011 OLD]**	4
3	Explain the working of rotate instructions of 8085 with proper example in each case.[LJIET] [**JUN 2012 OLD, MAY 2015 OLD]**	7
4	Write an AL program illustrating, Arithmetic& logic group of instructions.[LJIET] [**DEC 12 OLD]**	7
5	What is program format? Illustrate with an example .[LJIET] [**DEC 12 OLD]**	7

6	Write an AL program illustrating data transfer instruction group. [LJIET] [**DEC 2012 OLD]**	7
7	What is conditional &unconditional branching? Illustrate the answer with an example. [LJIET] [**DEC 2012 OLD]**	7
	PROGRAMS	
1	An array of binary numbers is stored in memory starting from address 3000H. There are ten numbers in the array. Write an ALP which finds out quantity of positive numbers, negative numbers and zeros in the data array and stores the results in memory location starting from address 3050H.[LJIET] [**JUN 2010 OLD]**	7
2	Write an ALP to multiply the contents of memory location 3040H by contents of memory location 3041H and stores the results in memory locations 3042H and 3043H with LS byte of the product at memory location 3042H. Draw also the flowchart. [LJIET] [**JUN 2010 OLD]**	7
3	Write a program to multiply two unsigned numbers stored in register pair H and L, save the result. [LJIET] [**DEC 2010 OLD]**	7
4	A string of readings is stored in memory location starting at 2070 H, and the end of the string is indicated by the byte 0D H. Write a program to check each byte in the string and save the bytes in the range of 30H and 39H (both inclusive) in memory locations starting from 2090H. [LJIET] [**DEC 2010 OLD]**	7
5	A set of current readings is stored in memory locations starting at XX50H.The end is indicated by the data byte 00H. Add the set of readings. The answer MAY be larger than FFH. Display the entire sum at PORT1 and PORT2 or store the answer in the memory locationsXX70 and XX71H. [Data(H) 32,52,F2,C5,00][LJIET] [**JUN 2011 OLD]**	7
6	The following block of data is stored in memory locations from XX55H to XX5AH. Transfer the data to the location XX80H to XX85H in the reverse order. [Data(H)22,A5,B2,99,FF,37][LJIET] [**JUN 2011 OLD]**	7
7	Write a program to sort the following set of marks scored by ten students in a database course in descending order. [Data(H) 63,41,56,62,48,5A,4F,4C,56,56][LJIET] [**JUN 2011 OLD]**	7
8	Write a program to find whether the given number stored in memory location 8000H is positive, negative or zero. If number is positive place FFH, If number is negative place FEH and if number is zero place FDH in memory location 8050H.[LJIET] [**DEC 2011 OLD]**	7
9	Write a program to add any ten byte type hexaDECimal numbers. Store FFH in memory locationF080H when the sum exceeds eight bits, otherwise store the sum.[LJIET] [**DEC 2011 OLD]**	7
10	Write an 8085 program to count the number of odd numbers in a block of five numbers. Number is odd, if it's LSB=1.Store your answer in ACC.[LJIET] [**JUN 2012 OLD]**	7
11	Write an 8085 program to copy block of ten numbers starting from location2050h to locations starting from 3050h.[LJIET] [**JUN 2012 OLD, JUN 2022 NEW]**	7
12	Two ASCII strings start at memory locations 1042H and 1052Hrespectively. Memory location1041H contains the length of the strings. The program sets the memory location 1040H to 00H, if the strings are equal and to FFH if they are not.[LJIET]**DEC 2013 OLD]**	7
13	A data array of length 16 (Decimal) has been stored in ascending order starting from memory location 3000H to 300FH. Write an ALP to store the data in descending order from memory location 3000H to 300FH (i.e. In the same original space). [LJIET] [**DEC 2013 OLD]**	7
14	Write assembly language programs for the following tasks: (1) Total 16 data stored at memory location 4050h to 405Fh. Write program to find out maximum data and store it at memory location 4080h.[LJIET] [**JUN 14 OLD]**	7
15	Write assembly language programs for the following tasks: (1) Write a program to find negative numbers in given set of data stored at the memory location4050h to 405Fh. Store all negative numbers at the memory location starting from 2050h. [LJIET] [**JUN 14 OLD]**	7
16	Five data bytes are stored in memory location C001H to C005H. Count number of ones in	7

	each byte and store this count in corresponding memory locations D001H to D005H. [LJIET] [**DEC 14 OLD]**	
17	An array of data bytes is stored beginning from memory location 2001H. Length of this array is stored in location 2000H. Find largest number of the array and store it in memory location3000H. .[LJIET] [**DEC 14 OLD]**	7
18	Ten 8-bit signed numbers are stored in memory locations beginning from 8000H. Move all negative numbers in memory locations beginning from 9000H.[LJIET] [**DEC 14 OLD]**	7
19	A data array of length 16 (DECimal) has been stored in the memory address starting from 3000H.Write an ALP to arrange the data in ascending order as well as in descending order and store the result in the memory location starting from 2000H and 2050H respectively.[LJIET] [**MAY 2015 OLD]**	7
20	Write an 8085 assembly language program to separate out the numbers between 20_{10} and 40_{10} from an array of Ten numbers stored on memory locations 2000H onwards. Store the separated numbers on a OLD array from 3000H onwards. [LJIET] [**DEC 2015 OLD]**	7
21	An array of Ten numbers is stored from memory location 2000H onwards. Write an 8085 assembly language program to separate out and store the EVEN and ODD numbers on OLD arrays from 2100H and 2200H, respectively. [LJIET] [**DEC 2015 OLD]**	7
22	Ten 8-bit signed numbers are stored in memory locations beginning from 8000H. Move all negative numbers in memory locations beginning from 9000H.[LJIET] [**DEC 14 OLD]**	7
23	Write an 8085 program to copy block of five numbers starting from location 2001h to locations starting from 3001h. [LJIET] [**MAY 2016 OLD]**	7
24	An array of 10 data bytes is stored on memory locations 2100h onwards. Write ALP to find the data bytes having complemented nibbles (e.g. 2Dh, 3Ch, 78h etc.) and store them on a OLD array starting from memory location 2200h onwards. [LJIET] [**DEC 2016 OLD]**	7
25	An array of twenty data bytes is stored on memory locations 4100h onwards. Write an ALP to remove duplicate entries from the array and store the compressed array on a OLD array starting from memory locations 4200h onwards. [LJIET] [**DEC 2016 OLD]**	7
26	Write ALP to count the number of bytes that are greater than 25 and lesser than 65 from an array of twenty bytes stored on memory locations 2000h onwards. Store these three counts and the maximum number on memory locations 3001h to 3004h, respectively. [LJIET][**DEC 2016 OLD]**	7
27	An array of ten bytes is stored on memory locations 2100h onwards. Write ALP to find the largest number and store it on memory location 2200h. [LJIET] [**MAY 2017 OLD]**	7
28	An array of twenty data bytes is stored on memory locations 2000h onwards. Write ALP to count number of zeros, odd numbers and even numbers and store them on memory locations 3000h, 3001h and 3002h respectively. [LJIET] [**MAY 2017 OLD]**	7
29	Write ALP to count the number of bytes that are greater than 20 and lesser than 40 from an array of ten bytes stored on memory locations 200h onwards. Store such numbers on memory locations 300h onwards. [LJIET] [**JUN/MAY 2017 OLD]**	7
30	Write an 8085 ALP sort an array of twenty bytes stored on memory locations 200h onwards in descending order. [LJIET] [**MAY 2017 OLD]**	7
31	Specify the content of accumulator and flag CY when the following instruction is executed MVI A, C5H ORA A RAL RRC [LJIET] [**NOV 2016 OLD]**	3
32	Specify the contents of Z and CY flags as the following instruction are executed SUB A DCR A INR A SUI 01H [LJIET] [**NOV 2016 OLD]**	3
33	A set of five reading is stored in memory starting 2070H. write a program to sort the readings in ascending order[LJIET] [**NOV 2016 OLD]**	7
34	Write program to count the number of odd numbers in block of ten numbers. Numbers is Odd if LSB = 1. Store your answer to accumulator [LJIET][**JUN 2017 OLD]**	7

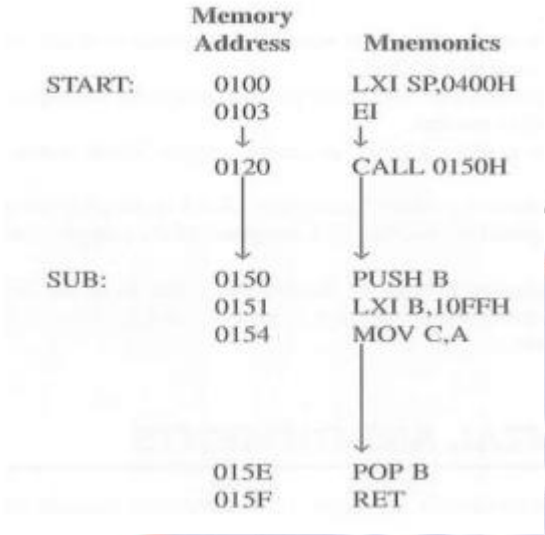
35	Write program to sort set of marks scored by ten students in a data base course in descending order. (assume data stored at memory location 2050H) [LJIET] [**NOV 2017 OLD]**	7
34	A set of numbers are stored in memory locations starting from C050H. The end of the data string is indicated by the data byte 00H. Add the numbers. The answer MAY be larger than FFH. Store the result in the locations D070H and D071H. [LJIET][**NOV 2017 OLD]**	7
35	Write an 8085 program to count the number of odd numbers in a block of five numbers. Number is odd, if it's LSB = 1. Store your answer in ACC. [LJIET][**NOV 2017 OLD]**	7
36	An array of ten data bytes is stored on memory locations 2100H onwards. Write an 8085 assembly language program to arrange them in ascending order. [LJIET][**NOV 2017 OLD]**	7
37	Write an 8085 assembly language program to count the number of bytes that are greater than 2010 and lesser than 4010 from an array of ten bytes stored on memory locations 2000H onwards. Store such numbers on memory locations 3000H onwards. [LJIET][**NOV 2017 OLD]**	7
38	Six data bytes of data are stored in memory locations starting at 2000H. Write 8085 program to add all data bytes . Use register B to save carries generated. Display the sum at two output port. Data: D2, 23, 04,25, 0A,70[LJIET] [**MAY 2018 OLD]**	7
39	A string of readings is stored in memory locations starting at XX70H and the end of string is indicated by byte 0DH. Write 8085 program to check each byte in the string and save the bytes between the range of 30H to 39H in memory location starting from XX90H. Data: 35, 2F, 30, 39, 37, 7F, 31, 0D [LJIET] **[MAY 2018 OLD]**	7
40	Write an 8085 program to add two 16-bit nos stored in memory locations 2100H and 2200H respectively.[LJIET] [**MAY 2018 OLD]**	4
41	Write an assembly language program to find the factorial of a number from 0 to 10. [LJIET] [**MAY 2018 OLD]**	4
42	Write an assembly language program to load any no in Register C. Find no of 1's and 0's. Store no. of 1's in reg. D and no of 0's in register E.[LJIET] [**May 2016 OLD]**	7
43	Total 16 data stored at memory location 4050h to 405Fh. Write program to copy these data into memory location 3000h to 300Fh.[LJIET] [**May 2016 OLD]**	7
44	Write a program in 8085 to arrange the five numbers in ascending order. Assume numbers are available from 9000h to 9004h. [LJIET] [**May 2019 OLD]**	7
45	An array of twenty data bytes is stored on memory locations 2000H onwards. Write an 8085 assembly language program to count the number of zeros, odd numbers and even numbers and store them on memory locations 3000H, 3001H and 3002H, respectively.[LJIET] [**May 2019 OLD]**	7
46	Write a programme to find a square of a number from memory location D100H and store the result from location D200H.[LJIET] [**May 2019 OLD]**	7
47	Write a programme to count the number of ones (1's) in a byte stored in the H register and store the count in E register.[LJIET] [**May 2019 OLD]**	7
48	Write a programme to sort the given N number from a block in ascending order. Assume that the memory block begins at D000H.[LJIET] [**May 2019 OLD]**	7
49	Write a programme to calculate the sum of series of even numbers. Assume that the length of the series is stored at memory location D000H and the series itself begins at memory location D0001H. Store the result at memory location E000H. .[LJIET] [**May 2019 OLD]**	7
50	The following block of data is stored in the memory locations from 2050H to 2055H. Write an 8085 Assembly language program to Transfer the data to the locations 2080H to 2085H in the reverse order DATA(H) 25, A5, 4F, E3, AF, F1[LJIET][**NOV 2018 OLD]**	7
51	Write an 8085 Assembly language program to interchange 16-bit data stored in memory locations 2050, 2051, 2052, and 2053. WITHOUT XCHG INSTRUCTION.[LJIET][**NOV 2018 OLD]**	4
52	Write an 8085 Assembly language program to add the following data bytes stored in memory locations starting at 4050H and display the sum at the output port if the sum does not generate a carry, stop the addition, and display 01H at the output port. DATA(H) 1A, 32, 4F, 12, 27.[LJIET][**NOV 2018 OLD]**	7
53	Write an assembly language program to add two 8 bit numbers stored at address 2050 and address 2051 in 8085 microprocessor. The starting address of the program is taken as 2000 [LJIET] [**DEC 2021 OLD]**	7
54	Write an assembly language program to find maximum of two 8 bit numbers in 8085 microprocessor.	7

	[LJIET] [**DEC 2021 OLD]**	
55	What will be the value in accumulator, for the given 8085 program below? MVI A, 07H RLC MOV B,A RLC RLC RLC ORA B HLT [LJIET] [**NOV 2021 NEW]**	3
56	What will be the value in accumulator, for the given 8085 program below? MVI C,7FH MVI B, 3EH MOV A, B RLC RLC ANI 7FH HLT [LJIET] [**NOV 2021 NEW]**	3
57	Ten 8-bit values are stored from memory location 3000H onwards. Write an 8085 assembly language program to find the largest value and stored it on the location 4000H. [LJIET] [**NOV 2021 NEW]**	7
58	Ten 8-bit values are stored from memory location 5000H onwards. Write an 8085 assembly language program to add POSITIVE values on addresses starts from 5100H and NEGATIVE values on addresses starts from 5200H. [LJIET] [**NOV 2021 NEW]**	7
59	An 8-bit binary number is stored in memory location 2000H. Write a program to convert the number into ASCII Hex code and save the result in memory locations 2050H and 2051H. [LJIET] **[JAN 2022 OLD]**	7
60	Five data bytes are stored on location starts from 6001H. Write an 8085 ALP to convert into 2's complement and store them on location 9001H. [LJIET] **[FEB 2021 OLD]**	3
61	10 data bytes are stored in memory location 2051H onwards. Write an 8085 assembly language program to count number of 1's in each byte and store this count in corresponding memory locations D001H onwards. [LJIET] **[FEB 2021 OLD]**	4
62	Write an 8085-assembly language program to add the numbers stored in two arrays of 10 bytes stored on memory location at 2100H and 2200H onwards. Store answer of addition of each numbers of both array on memory locations 2300H onwards. [LJIET]**[SEP 2021 OLD]**	7
63	Write ALP to display binary up counter which count numbers from 00H to FFH and increment numbers at an interval of 0.5 Sec. Use 8085 of operating frequency 2 MHz. [LJIET]**[JAN 2023 OLD]**	7
64	Difference between RRC and RAR instruction. [LJIET]**[DEC 2022 NEW]**	3
65	Write an 8085 program to add two 16-bit no. stored in memory locations 2100H and 2200H respectively and store the answer on 2300H (Lower Byte) and 2301H (Higher byte). [LJIET]**[JUN 2022 OLD]**	4
	UNIT 6: **STACK AND SUBROUTINES**	
Sr. no	**SHORT QUESTIONS**	**Marks**
1	State the uses of program counter and stack pointer registers of 8085 microprocessor [LJIET] [**DEC 2016 OLD]**	1
2	How many times the loop will be executed LXI B, 0007H	1

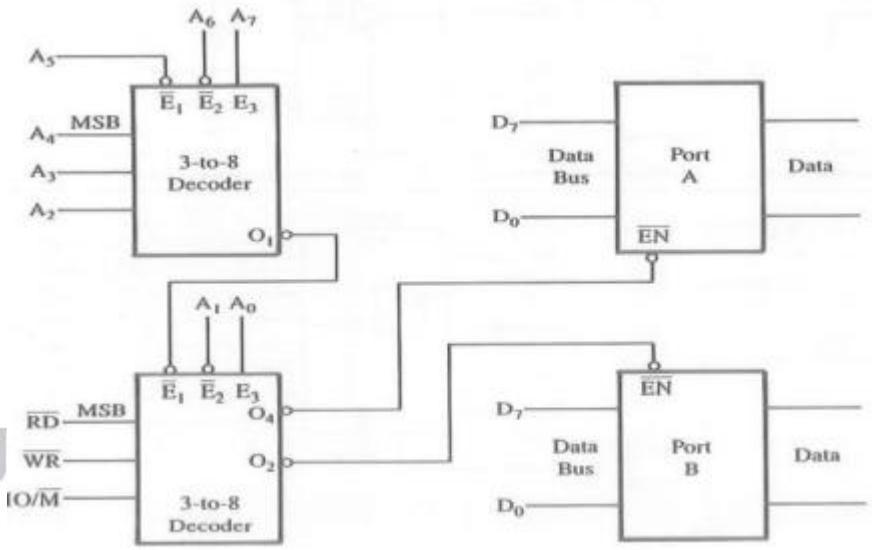
	LOOP:DCX B JNZ LOOP [LJIET] [**NOV 2016 OLD]**	
Sr. no	**DESCRIPTIVE QUESTIONS**	**Marks**
1	What is subroutine? How it is called? State advantage of subroutine.[LJIET] [**DEC 2011 OLD]**	3
2	What is stack and stack pointer? Explain working of PUSH and POP with suitable example [LJIET] **[DEC 2010 OLD JUN 2017 OLD]**	7
3	What is a subroutine? Write an AL program to obtain a time delay using three registers in nested loop.[LJIET] [**DEC 2012 OLD]**	7
4	What is Stack and Stack pointer register? Explain the working and use of stack in subroutine program.**[**LJIET] [**JUN 2013 OLD, FEB 2021 OLD]**	7
5	What is stack? Explain stack operations in 8085 microprocessor using PUSH and POP instructions with neat sketches. When stack operations are needed? .[LJIET] [**JUN 14 OLD]**	7
6	With the help of neat diagram explain data transfer during the execution of CALL 507BH instruction stored in memory beginning from 40A2H. [LJIET][**MAY 2015 OLD]**	**7**
7	What is subroutine? How it is called? State advantage of subroutine.[LJIET] [**DEC 2011 OLD]**	3
8	Explain subroutine with proper example. [LJIET] [**MAY 2015 MAY 2016 OLD]**	7
9	What is an ISR? Differentiate between a Subroutine and an ISR. Write an 8085 assembly language program to continuously read an input port with address 50H. Also write an ISR to send the same data to output port with address A0H when 8085 receives an interrupt request on its RST 5.5 pin.[LJIET] [**DEC 2015 OLD]**	7
10	Define the concepts of stack and subroutine. Explain the PUSH and POP instruction of an 8085 microprocessor with example [LJIET] [**DEC 2016 OLD]**	4
11	Define concept of subroutine. Explain the CALL and RET instruction with proper example [LJIET] [**MAY 2017 OLD]**	4
12	Discuss the use of stack for subroutine.Explain the PUSH and POP instruction of an 8085 microprocessor with example. Compare CALL and RET instruction [LJIET] [**NOV 2016 OLD]**	7
13	What is stack and stack pointer? Explain working of PUSH and POP instruction with suitable example. [LJIET] [**NOV 2017 OLD]**	7
14	Explain the PUSH and POP instructions of the 8085 microprocessor with example. [LJIET] [**NOV 2017 OLD]**	4
15	What is an ISR? Differentiate between a Subroutine and an ISR. [LJIET] [**NOV 2017 OLD]**	3
16	What is stack? Explain stack operations in 8085 using PUSH and POP operations with neat sketches. List out all stack related 8085 instructions.[LJIET] [**MAY 2018 OLD]**	7
17	Explain stack and subroutine with suitable example. [LJIET][**MAY 2018 OLD NOV 2021 NEW]**	4
18	Enlist and explain various conditional CALL instructions of the 8085 microprocessor. [LJIET] [**NOV 2017 OLD]**	4
19	Explain PUSH and POP instructions.[LJIET] [**May 2016 OLD MAY 2019 OLD]**	7
20	Define the concepts of stack and subroutine. Explain the PUSH and POP instructions of an 8085 microprocessor with example. .[LJIET] [**MAY 2019 OLD]**	3
21	Explain the concept of subroutine with help of CALL and RET instructions [LJIET] [DEC 2019 OLD]	7
22	Explain stack and subroutine with proper example. [LJIET] [**DEC 2021 OLD]**	7
23	Explain the working of PUSH and POP instructions of 8085 with proper example in each case.[LJIET**][JAN 2023 OLD]**	4

24	Differentiate between subroutine and interrupt service routine. [LJIET]**[JAN 2023 OLD]**	3
25	LOOP: LXI H, 1234H DCX H JNZ LOOP Find out the mistake(s) in the above program and write the correct program so that it does not become infinite loop. [LJIET]**[DEC 2022 NEW]**	4
26	Explain the PUSH and POP instructions of an 8085 microprocessor with example. [LJIET]**[JUN 2022 OLD]**	4
27	Explain the Explain the concept of stack.. [LJIET]**[JUN 2022 NEW]**	3
28	State the difference between PUSH and POP instruction. [LJIET]**[JUN 2022 NEW]**	3
	PROGRAMES	
	TOPIC: COUNTERS AND TIME DELAY	
1	Design a modulo-12 down counter to count from 0BH to 00H. After count 00H, the count should go back to 0BH and repeat the sequence. Provide 1sec. Delay between counts and display the count at an output port 01H. The clock frequency is 1MHz. Show your timing calculations assuming suitable value of T states for various instructions. Draw also the flowchart.[LJIET] [**JUN 2010 OLD]**	7
2	Write a program to count continuously in hexaDECimal from FFH to 00H in a system with a clock period of 0.5 μs. Use register C to set up 1 millisecond delay between each count and display the number at the output port1.[LJIET] [**DEC 2010 OLD, JUN 2022 NEW]**	7
3	Write a program for 8085 to generate a square wave with period of 400μs. Use bit D0 to output the square wave. The system clock period is 325ns.[LJIET] [**DEC 2010 OLD]**	7
4	Design a down-counter to count from 99 to 0 in BCD with 500 ms delay between each count. Display the count at an output port.[LJIET] [**JUN 2011 OLD]**	7
5	Write a program to generate a continuous square wave with the period of 500 micro Second Assume the system clock period is 325 ns. And use bit D0 to output the square wave.[LJIET] [**JUN2011 OLD]**	7
6	Write a program to generate a rectangular wave with a 200 micro Second on period and 400 Micro Second off period.[LJIET] [**JUN 2011 OLD]**	7
7	Write and ALP to design a delay of 500ms. Make necessary assumptions and write the assumptions clearly.[LJIET] [**JUN 13 OLD]**	7
8	Write an ALP to count from 00 to 20H with a delay of 100ms. between each count. After the count 20H, the counter should reset itself and repeat the sequence. Use register pair DE as a delay register. Draw a flowchart and show your approximate delay calculations for 100ms.delay. The clock freq. is 1Mhz. Assume suitable value of T states for the delay calculation.[LJIET] [**DEC 2013 OLD]**	7
9	Write DELAY subroutine to generate 1 second delay. Use this subroutine in DECimal counterprogram which counts 0 to 9 continuously at the interval of 1 second. Consider crystal frequency 2MHz. Display count value on output device which is having address 08h.[LJIET][**JUN 14 OLD]**	7
10	Generate a square wave of 5KHz on D0 of output port 80H using appropriate DELAY subroutine assuming crystal frequency of 4MHz. Show your delay calculations. [LJIET] **[DEC 14 OLD]**	7
11	Write a program for 8085 to generate a square wave with period of 400μs. Use bit D0 to output the square wave. The system clock period is 325ns.[LJIET] [**MAY 2015 OLD]**	7
12	Write an ALP to count from 00 to 20H with a delay of 100 ms. between each count. After the count 20H, the counter should reset itself and repeat the sequence. Use register pair DE as a delay register. Draw a flowchart and show your approximate delay calculations for 100ms delay. The clock freq. is 1Mhz. Assume suitable value of T states for the delay calculation.[LJIET][**MAY 2015 OLD]**	7
13	Write an 8085 assembly language program to generate a DECimal counter (which counts 0 to 9 continuously) with a one second delay in between. Also write a subroutine DELAY for	7

	generating a 1 second delay. Assume a crystal frequency of 2MHz. [LJIET] [**DEC 2015 OLD]**	
14	Write ALP for displaying binary up counter. Counter should count numbers from 00H to FFH and it should increment after every 0.5 sec. (use 8085 operating frequency =2MHz). [LJIET] [**MAY 2015 OLD]**	7
15	Write ALP for displaying binary up counter. Counter should count numbers from 00h to FFh and it should increment after every 0.5 sec. (clock freq 2Mhz) [LJIET] [**MAY 2016 OLD]**	7
16	Write ALP to generate a 0.5 sec delay, if crystal frequency is 4Mhz. [LJIET] [**MAY 2017 OLD]**	7
17	Write a program to generate square wave with period of 400 micro second. Use d7 to output square wave(assume system clock 325ns) [LJIET] [**NOV 2016 OLD]**	3
18	Write program for 8085 to generate a square wave with clock period of 400 micro second. Use D0 bit to output the square wave. The system clock period is 325 ns [LJIET][**JUN 2017 OLD]**	7
19	Write a program to generate a square wave with the period of 500 ms. Assume the system clock period is 325 ns. And use bit D0 to output the square wave. [LJIET][**NOV 2017 OLD]**	7
20	Write a set of 8085 assembly language instructions to generate a 0.5 second delay, if the crystal frequency is 4 MHz. [LJIET][**NOV 2017 OLD]**	4
21	Write a program to count continuously in hexaDECimal from FFH to 00H in a system with a 0.5 μs clock period. Use register C to set up a one millisecond (ms) delay between each count and display the numbers at one of the output port.[LJIET][**MAY 2018 OLD]**	7
22	Design an up-down counter to count from 0 to 7 and 7 to 0 continuously with a 1-second delay between each count, and display the count at one of the output ports. Show the delay calculation[LJIET][**NOV 2018 OLD]**	4
23	Consider the following 8085 assembly language instructions: LXI D, 1234H NEXT: DCX D MOV A, E ORA D JNZ NEXT What amount of delay is generated if the crystal frequency is 4 MHz? [LJIET] [**NOV 2021 NEW]**	4
24	Design an up-down counter to count from 0 to 7 and 7 to 0 continuously with a 1-second delay between each count and display the count at one of the output ports. Show the delay calculation assuming T-state duration of 1 micro-second. [LJIET] **[SEP 2021 OLD]**	7
25	Write an 8085 ALP to convert a two digit BCD number stored at 2000h and 2001h to its equivalent hexadecimal number at 3000h. [LJIET**][JAN 2023 OLD]**	7
26	The main program stored is beginning at 0100H. The main program (at (0120H) has called the subroutine at 0150H, and when the microprocessor is executing the instruction at 0151H, it is interrupted. Read the following program and answer the questions that follows.	4

	 a) Specify the content of stack location 03FFH after the CALL instruction. b) Specify the content of stack location where content of B and C are stored. c) When program is interrupted, which memory address is stored on the stack? [LJIET]**[JUN 2022 OLD]**	
	TOPIC:SUBROUTINE	
1	Write ALP to calculate the factorial of a number between 0 to 8. [LJIET] [**MAY 2015 OLD, MAY 2016 OLD]**	7
2	Two 8-bit numbers are stored in memory locations D000H and D001H. Write an assembly language program to multiply them and store the result in memory locations E000H (LSB) onwards.[LJIET] [**DEC 14 OLD]**	7
3	Write a set of 8085 assembly language instructions to generate 1 second delay, if the crystal frequency is 2 MHz [LJIET]**[JUN 2022 OLD]**	4
	TOPIC:CODE CONVERSATION	
1	A set of ten BCD numbers are stored in memory locations starting from 2500H. Write an ALP to convert each BCD number to binary hex number and store the result in memory locations starting from address 4000H.[LJIET] [**JUN 2010 OLD]**	7
2	A binary number is stored in memory location 3040H convert it to BCD number and store BCD1(least significant BCD digit) into memory location 3041H and BCD2 and BCD3 in memory locations 3042H and3043H respectively.[LJIET] [**DEC 2013 OLD]**	7
3	Explain process of converting HEX data into BCD. Write a program to convert hexaDECimal number into equivalent BCD number. HEX data is available from input device at address FFh. Convert that data into BCD and store BCD digits at location 2100h, 2101h and 2102h. LSD at2100h and MSD at 2102.[LJIET] [**JUN 14 OLD]**	7
4	Write an 8085 assembly language program to convert a two-digit BCD number into its equivalent hexadecimal number. [LJIET] [**DEC 2015 OLD]** Write an 8085 ALP to convert BCD number to binary hex number. (49)BCD = (31)H[LJIET] **[FEB 2021 OLD]**	7,4
5	Write an 8085 assembly language program to convert an 8-bit hexaDECimal number into its equivalent Decimal number. [LJIET] [**DEC 2015 OLD]**	7
6	A set of ten BCD numbers are stored in memory locations starting from 2500H. Write an ALP to convert each BCD number to binary hex number and store the result in memory locations starting from address 4000H.[LJIET] [**JUN 2010 OLD]**	7
7	A binary number is stored in memory location 2050H. WLP to convert into BCD, store each BCD as two unpacked BCD digits in the output buffer. [LJIET] [**NOV 2016 OLD]**	7
8	Write an 8085 assembly language program to convert a two-digit BCD number into its equivalent hexaDECimal number. [LJIET] [**DEC 2017 OLD]**	4

9	A set of ten packed BCD numbers are stored in memory location starting from XX50H. Write a program without subroutine to add these numbers in BCD. If carry is generated save in register B, and adjust it for BCD. The final sum will be less than 9999BCD.[LJIET] [**MAY 2019 OLD]**	7
10	A BCD number between 0 and 99 is stored in a memory location named INBUF. Write a main program and a subroutine to convert the BCD number into its equivalent binary number. Store the result in a memory location called OUTBUF. [LJIET] [**MAY 2019 OLD]**	7
11	Write an 8085 assembly language program to convert a two-digit BCD number into its equivalent hexadecimal number [LJIET] **[NOV 2021 NEW]**	4
12	Write an 8085 ALP to count positive and negative data bytes from 10 bytes stored on location 3001 onwards. Store count of positive data bytes in location 4001H and count of negative data bytes on location 5001H.[LJIET] **[FEB 2021 OLD]**	4
13	An array of 10 bytes is stored from memory location 2000H. Write an 8085 assembly language program (ALP) to count even and odd numbers from this array and store them at 3000h and 30001H location respectively.[LJIET]**[JAN 2023 OLD]**	7
14	Write an 8085 ALP to arrange 10 data bytes stored from memory location C100H onwards in descending order.[LJIET]**[JAN 2023 OLD]**	7
15	An array of 10 bytes is stored from memory location 2000h write an assembly level program for 8085 to separate out positive numbers and even numbers from given array. Make new arrays of positive number start from 3000h and even numbers start from 4000h. [LJIET]**[JUN 2022 OLD]**	7
16	An array of ten 8-bit BCD numbers is stored on memory locations 4100H onwards. Write an 8085 assembly language program to add all these ten numbers and store it on memory location 4200H (Lower byte of answer) and 4201H (Higher byte of answer).[LJIET][**JUN 2022 OLD]**	7
	UNIT 7: INTERRUPT & I/O INTERFACING	
	TOPIC:I/O INTERFACING	
Sr. no	**DESCRIPTIVE QUESTIONS**	**Marks**
1	Why the number of output ports in I/O mapped I/O is restricted to 256 ports? In I/O mapped I/O, the input and output ports can have the same 8-bit address than how does the microprocessor differentiate between the input and output ports? [LJIET] [**MAY 2015 OLD]**	2
2	Write short note on (i) Serial I/O lines ,SOD and SID (ii) Comparison between memory map I/O and I/O map I/O. [LJIET] [**DEC 2011 OLD]**	**7**
3	Discuss in detail memory mapped I/O and I/O mapped I/O.[LJIET] [**DEC 2010 OLD ,JUN 2010 OLD, JUN 2012 OLD JUN 2017 OLD]**	7
4	Compare memory mapped I/O with I/O mapped I/O.[LJIET][**JUN 2013 OLD ,MAY 15 OLD , DEC 2015 OLD, FEB 2021 OLD, JUN 2022 OLD, JUN 2022 NEW]**	7,4,3
5	Discuss in detail memory mapped I/O and I/O mapped I/O.[LJIET]**DEC 2010 OLD, DEC 2013 OLD, DEC 2015 OLD]**	**7**
6	What is an input port? Explain the design of input port with an example.[LJIET] [**JUN 2012 OLD]**	**7**
7	What is an output port? Explain the design of output port with an example.[LJIET] [**JUN 2012 OLD]**	7
9	What is interfacing? How is it done ? .[LJIET] [**DEC 2012 OLD]**	4
10	Design an interfacing circuit for one input port with eight DIP switches and one output port with eight LEDs, using the components as listed. (1)74LS138: 3-to-8 DECoder. (2)74LS244: tri-state buffer (3)74LS373: octal latch (4) Two 2-input NAND gates. [LJIET][**DEC 2010 OLD, JAN 2022 OLD]**	7
11	show all the necessary connections to interface eight LED using an output port with address 39h with	4

	8085 microprocessor . assume demultiplexed add/data lines [LJIET] [**MAY 2017 OLD]**	
12	Draw an interfacing diagram to connect 8 DIP switches through input port with address 55H and 8 LEDs through output port with address AAH with 8085 microprocessor. **[LJIET][DEC 2015 OLD]**	7
13	Sketch and explain scheme of interfacing one input and one output device using gates and a 3 to 8 DECoder with two EN^{-} and one EN input. Both devices should have the address FAH.[LJIET] [**DEC 13 OLD]**	7
14	Show all the necessary connections to interface eight LED using and output port with address 45H with 8085 microprocessor. Use demultiplexed address/data lines and 3-to-8 DECoder (74LS138) [LJIET] [**DEC 2016 OLD]**	4
15	Differentiate between memory-mapped I/O and peripheral-mapped I/O. [LJIET] [**NOV 2017 OLD]**	3
16	Show all the necessary connections to interface eight LEDs using an output port with address 35h and eight DIP switches using an input port with address 45h with 8085 microprocessor. Assume demultiplexed address/data lines and use 3-to-8 DECoder (74LS138). [LJIET] [**NOV 2017 OLD]**	7
17	Compare memory mapped I/O with peripheral mapped I/O [LJIET] [**May 2016 OLD MAY 2019 OLD]**	7
18	Design an 8085 microprocessor system with 74LS138 to interface eight number of push button switches at the port address 38H and common anode seven segment LED display at 3AH [LJIET] [**May 2019 OLD]**	4
19	A Railway crossing signal has two flashing lights run by a microcomputer. One light is connected to data bit D7 and the second light is connected to data bit D6. Write a program to turn each signal light alternately ON and OFF at an interval of 2 second.[LJIET][**NOV 2018 OLD]**	4
20	Explain memory mapped I/O and I/O mapped I/O. [LJIET] [DEC 2019 OLD]	7
21	Interface common anode 7 segment LED using an output port with address 39H with 8085 microprocessor. Assume demultiplexed address/data line.[LJIET] **[SEP 2021 OLD]**	4
22	Show necessary connection to interface 7-segment LEDs using an output port with address 24H and eight DIP switches with input port address 76H to 8085 microprocessor. Assume demultiplexed address/ data lines and 3-8 decoders.[LJIET] **[JAN 2023 OLD]**	7
23	Why buffer is used for input port and latch for output port? [LJIET**][JUN 2022 OLD]**	3
24	Identify port A and Port b as input or output ports in following figure and What are the addresses of port A and B  [LJIET**][JUN 2022 OLD]**	4
25	TUBE LIGHT PC POWER	7

	BANK LAPTOP LAMP I PAD FAN AC Assume that above electronic items are plugged in single electric board. Here switch S7, S6, S5, S4, S3, S2, S1 and S0 are connected to the data line D7, D6, D5, D4, D3, D2, D1 and D0 respectively. When all the switches are OFF, the microprocessor reads the data FFH (for all switches ON the data will be 00H). Initially all the switches are ON. Write assembly language program for the following scenarios: 1. Krunal prefer to do work in night only if AC, LAMP and LAPTOP are ON. 2. Chirag never use I-PAD if PC and POWERBANK are ON. 3. Arkil feels comfortable to work on PC if AC and TUBE LIGHT are ON. 4. Avadh never take concern of electricity bill and work only if POWER BANK and LAMP are OFF. 5. In day time we prefer to do work with availability of FAN and PC. [LJIET]**[DEC 2022 NEW]**	
26	Write an assembly language program to provide the given ON/OFF time to traffic lights (Red, Green, and Yellow) and two pedestrian signs (Walk and Don't Walk). The signal lights are turned ON/OFF by the data bits of PORT1 and gives output as shown below, No Light Data Bits On Time 1 Red D1 40 Seconds 2 Green D3 30 Seconds 3 Yellow D5 10 Seconds 4 Walk D6 30 Seconds 5 Don't Walk D7 50 Seconds The traffic and pedestrian flows are in the same direction; the pedestrian should cross the road when the Green light is ON. Also write Delay subroutine to generate appropriate delay. Assume to turn ON Light, a "0" logic level required at corresponding data bits of the output port.[LJIET]**[DEC 2022 NEW]**	7
	TOPIC:INTERRUPT	
Sr. no	**SHORT QUESTIONS**	**Marks**
1	What is interrupt? Enlist the hardware interrupt sources (pins) available on the 8085 microprocessor chip [LJIET][**DEC 2016 OLD]**	1
Sr. no	**DESCRIPTIVE QUESTIONS**	**Marks**
1	What is interrupt? What are the interrupts available in 8085 microprocessor? Write interrupt vector table for vectored interrupts. Explain SIM and RIM instructions. . [LJIET]**JUN 2014 OLD, MAY 15 OLD]**	7
2	What are the vectored interrupts? Distinguish between the hardware &software interrupts. [LJIET][**DEC 2012 OLD]**	7
3	What are interrupts? List and explain the interrupt available in microprocessor 8085.[LJIET] [**JUN13 OLD, DEC 2015 OLD, JUN 2022 NEW]** What are interrupts? List and explain the interrupts available in microprocessor 8085? [LJIET]**[FEB 2021 OLD]**	7
4	Explain clearly the interrupt arrangement in 8085 microprocessor with appropriate diagram. How interrupts are activated ? to which memory location interrupt points? How the priority is arranged? How interrupts can be cleared .[LJIET] [**JUN 2010 OLD]**	7
5	Write a detailed note on Interrupts of 8085.[LJIET][**DEC 2010 OLD]**	7
7	Differentiate between the hardware and software interrupts. How many such interrupts are available in 8085 microprocessor? [LJIET] [**DEC 2016 OLD, DEC 2012 OLD ,MAY 2019 OLD, JAN 2023 OLD]**	3
8	State the difference between vectored and non-vectored interrupts. Explain vectored interrupts of 8085 microprocessor. [LJIET] [**DEC 2016 OLD, MAY 2017 OLD, MAY 2017 OLD]**	3/7

9	Explain RIM and SIM instruction of an 8085 microprocessor [LJIET] **JUN 2010 OLD, DEC 2016 OLD, MAY 2017 OLD, DEC 2013 OLD]**	4
10	Enlist the sequence of steps occur when the interrupt request is place on the INTR pin of 8085 microprocessor [LJIET][**MAY 2017 OLD]**	3
11	What are the vectored interrupts? Distinguish between the hardware &software interrupts. Explain SIM instruction in detail [LJIET][**NOV 2016 OLD]**	7
12	Explain the interrupt types and priorities in 8085 with necessary diagram [LJIET][**JUN 2017 OLD]**	7
13	Explain interrupts available on 8085 with diagram. Diagram [LJIET][**NOV 2017 OLD]**	7
14	What is an interrupt? Explain various interrupts of the 8085 microprocessor. [LJIET][**NOV 2017 OLD]** List different hardware and software interrupts of 8085 microprocessor. [LJIET]**[SEP 2021 OLD, JUN 2022 OLD]**	3
15	What is Interrupt? How many interrupts are available in 8085? Write interrupt vectored table for 8085. [LJIET] [**MAY 2018 OLD]**	7
16	Explain the SIM and RIM instructions of 8085 in detail. [LJIET] [**MAY 2018 OLD**, **JAN 2022 OLD]** Explain the SIM and RIM instructions of the 8085 microprocessor. [LJIET] **[SEP 2021 OLD]**	7,3
17	Differentiate: (1) higher level language and low level language (2) hardware and software interrupt [LJIET] [**MAY 2018 OLD]**	4
18	Explain RIM & SIM instructions. [LJIET] [**May 2016 OLD]**	7
19	Enlist the sequence of steps occur when the interrupt request is placed on the INTR pin of the 8085 microprocessor. [LJIET] [**MAY 2019 OLD]**	3
20	What is Interrupt? Explain 8085 Vectored Interrupts in detail[LJIET] [**MAY 2019 OLD]**	7
21	List and explain the interrupt available in microprocessor 8085. [LJIET][**NOV 2018 OLD]**	3
22	List all the interrupt signals of 8085 microprocessors. [LJIET] **[DEC 2019 OLD]**	4
23	What is interrupt? List hardware interrupts of 8085. [LJIET] [**NOV 2021 NEW]**	3
24	What is an interrupt? Explain various interrupts of the 8085 Microprocessor.[LJIET**][JAN 2023 OLD]**	4
25	Explain the SIM and RIM instructions of the 8085 processor. [LJIET] **[JAN 2023 OLD]**	4
26	Differentiate between maskable and non-maskable interrupts. [LJIET**][DEC 2022 NEW]**	4
27	What is vectored and non-vectored interrupts? [LJIET**][DEC 2022 NEW]**	4
	TOPIC:8259A PROGRAMMABLE INTERRUPT CONTROLLER	
Sr. no	**SHORT QUESTIONS**	**Marks**
1	State various types of registers available in programmable interrupt controller [LJIET] [**DEC 2016 MAY 2017 OLD]**	1
Sr. no	**DESCRIPTIVE QUESTIONS**	**Marks**
1	With neat diagram discuss the working of IC 8259A Programmable interrupt controller.[LJIET] [**DEC 2010 OLD, MAY 2014 OLD, DEC 2015 OLD, MAY 2017 OLD, JUN 2010 DEC 2011 OLD]**	7
2	List major components of the 8259A interrupt controller and explain their functions.[LJIET] [**JUN 2011 OLD]**	7
3	Discuss about the 8259A. [LJIET] [**JUN 2011 OLD]**	7
4	Explain the initialization of 8259 interrupt controller.[LJIET] [**JUN 2012 OLD]**	7
5	Explain the block diagram of 8259A programmable interrupt controller. What are its features? Explain the interrupt operation of 8259A in the simplest formet .[LJIET] [**DEC**	7

	2013 OLD, JAN 2022 OLD] What is the need of the programmable interrupt controller (8259A)? Draw and explain the block diagram of 8259A.[LJIET] **[SEP 2021 OLD]**	
6	Draw and explain programmable interrupt controller [LJIET][**MAY 2016 DEC 2016 OLD NOV 2016 OLD]** Draw and explain programmable interrupt controller 8259A.[LJIET]**[FEB 2021 OLD]**	7
7	List major components of the 8259A interrupt controller and explain their functions. .[LJIET] [**NOV 2017 OLD]**	7
8	Draw and explain the block diagram of the programmable interrupt controller (8259A). [LJIET] [**NOV 2017 OLD NOV 2021 NEW]**	7
9	Draw and explain block diagram of 8259A Programmable Interrupt Controller [LJIET] [**MAY 2018 OLD]**	7
10	Explain programmable interrupt controller 8259A in detail.[LJIET] [**MAY 2018 OLD MAY 2019 OLD, JUN 2022 OLD]**	7
11	Draw & explain block diagram of 8259.[LJIET] [**May 2016 OLD MAY 2019 OLD]**	7
12	Draw Block Diagram and Pin Diagram of 8259 Microcontroller.[LJIET][**NOV 2018 OLD]**	3
13	Explain programmable interrupt controller 8259A. [LJIET] [**DEC 2021 OLD]**	4
14	State the important features of programmable peripheral interface IC (8255A).[LJIET]**[JAN 2023 OLD]**	3
15	Explain the important features of Programmable Interrupt controller IC 8259A.[LJIET]**[JAN 2023 OLD]**	3
16	Explain the internal Block diagram of 8259A. [LJIET]**[DEC 2022 NEW]**	7
17	Draw the internal block diagram of 8259A and explain the functions of each block in detail. [LJIET]**[JUN 2022 NEW]**	7
18	Draw the internal block diagram of 8255 and explain the functions of each block in details.[LJIET]**[JUN 2022 NEW]**	7
	TOPIC:8255A PROGRAMMABLE PERIPHERAL PORT	
Sr. no	**DESCRIPTIVE QUESTIONS**	**Marks**
1	Draw and explain the block diagram of 8255A programmable peripheral port.[LJIET] **JUN 2010 OLD, DEC 2011 OLD, DEC 2013 OLD, DEC 14 OLD, MAY 15 OLD, DEC 2015 OLD MAY 2017 OLD JUN 2017 OLD, JAN 2022 OLD]**	7
2	Draw the functional block diagram of IC 8255A and answer following questions: 1)List the operating modes of IC 8255A 2)Discuss control word format 3)specify the hand shake signals and their functions if port A is set up as an output port in mode 1. .[LJIET] [**DEC 2010 OLD Winter 2016 OLD]**	7
3	Write initialization instruction for the 8255A to set up : 1) Port A as I/P port in mode 0 2) Port B as O/P port in mode 1 3) Port C upper as an O/P in mode 0 Assume address of control word register as 83H .[LJIET] [**DEC 2010 OLD]**	7
4	Explain various operating modes of 8255A.[LJIET] [**DEC 2011 OLD]**	4
5	Explain handshake signal .[LJIET] [**DEC 2011 OLD]**	3
6	Give the control word of 8255 and explain the mode 1 Input operation in detail. [LJIET] [**MAY 2012 OLD]**	7
7	State the significance of a control word. [LJIET] [**DEC 12 OLD]**	3
8	Discuss the main applications of 8255 and working of 8255 in various modes.[LJIET] [**JUN 2013 OLD]**	7
9	With the help of block diagram explain the internal architecture of IC 8255and describe its working in BSR mode. [LJIET] [**DEC 13 OLD, MAY 2015 OLD]**	7
10	Draw and explain block diagram of 8255A programmable peripheral interface .what do you	7

	mean by BSR mode[LJIET] [**MAY 2016 OLD]**	
11	With necessary diagrams, explain mode 1 of the programmable peripheral interface (8255A) with necessary diagram [LJIET] [**DEC 2016 OLD]**	7
12	With the help of block diagram explain the internal architecture of IC 8255. [LJIET] [**NOV 2017 OLD]**	7
13	Draw and explain the block diagram of the programmable peripheral interface (8255A). [LJIET] [**NOV 2017 OLD, JUN 2022 OLD]**	7
14	Draw and explain block diagram of 8254 Programmable Interval Timer. [LJIET] [**MAY 2018 OLD]**	7
15	Draw the control word format of 8255 for I/O mode and explain it. [LJIET] [**MAY 2018 OLD]**	7
16	What is USART? Draw the functional block diagram of 8251 and explain the function of each block [LJIET] [**MAY 2018 OLD].**	7
17	How many I/O modes are available in 8255A programmable peripheral interface? List and explain them in short. [LJIET] [**MAY 2018 OLD]**	3
18	Draw and explain the block diagram of the programmable peripheral interface (8255A). [LJIET] [**NOV 2017 OLD]**	7
19	With the help of block diagram explain the internal architecture of IC 8255 and describe its working in BSR mode. [LJIET] [**May 2016 OLD]**	7
20	Draw and explain the block diagram of the programmable peripheral interface (8255A) [LJIET] [**May 2019 OLD]**	7
21	Explain any two working modes of IC 8254-Programmable interval timer. [LJIET] [DEC 2019 OLD]	4
22	Draw and explain the functional block of IC 8255A and also discuss the operating modes and control word format of 8255A. [LJIET] **[DEC 2019 OLD]**	7
23	Draw and explain block diagram of 8255A Programmable peripheral interface device. [LJIET] [**DEC 2021 OLD NOV 2021 NEW]**	7
24	What is the need of the programmable peripheral interface (8255A)? Explain different modes of operation of 8255A**.** [LJIET] **[SEP 2021 OLD]**	7
25	Draw and explain programmable peripheral interface 8255A. [LJIET] **[FEB 2021 OLD]**	7
26	Explain MODE 0 and BSR mode of operation of IC 8255A. [LJIET]**[JAN 2023 OLD]**	4
27	Explain the internal Block diagram of 8255A. [LJIET]**[DEC 2022 NEW]**	7
	UNIT 8: ADVANCED MICROPROCESSORS	
	TOPIC:8086 MICROPROCESSOR	
Sr. no	**SHORT QUESTIONS**	**Marks**
1	Draw the format of a flag registers of an 8086 microprocessor [LJIET][**DEC 2016, MAY 2017 OLD]**	1
2	What will be the physical address (PA) if CS and IP register contents of an 8086 microprocessor are 2500h and 0002h respectively [LJIET] [**DEC 2016 OLD]**	1
3	Explain the following pins of an 8086 microprocessor BHE,RQ/GTO [LJIET] **[DEC 2016 OLD]**	1
4	Explain the use of BHE/s7 pin of the 8086 microprocessor[LJIET] [**MAY 2017 OLD]**	1
5	Explain various segment register available in the 8086 microprocessor [LJIET] **[DEC 2016 OLD, MAY 2017 OLD]**	1
6	What will be the physical address (PA) if CS and IP register contents of the 8086 microprocessor are 2000h and 20h, respectively? [LJIET] [**MAY 2017 OLD]**	1

Sr. no	DESCRIPTIVE QUESTIONS	Marks
1	Describe the importance of bus interface unit (BIU) and execution unit (EU) an 8086 microprocessor [LJIET][**DEC 2016, MAY 2017 OLD]**	3
2	Explain pins for 8086 TEST,LOCK [LJIET] [**MAY 2017 OLD]**	3
3	Draw and explain the format of a flag register of the 8086 microprocessor. [LJIET] [**NOV 2017 OLD]** Explain flag register of 8086 microprocessor..[LJIET] **[FEB 2021 OLD]**	3
4	How many flags are available in an 8086 microprocessor? How the parity flag (PF) is used by 8086 microprocessor?[LJIET] [**MAY 2018 OLD]**	3
4	Differentiate 8085 microprocessor with 8086 microprocessor. [**MAY 2018 OLD]**	3
5	How the physical addresses are calculated from segment register in 8086 microprocessor [LJIET] [**MAY 2018 OLD]**	4
6	Draw and explain internal architecture diagram of 8086 microprocessor.[LJIET] [**MAY 2018 OLD]** Draw and explain internal architecture diagram of 8086 microprocessor[LJIET] **[SEP 2021 OLD]**	7,4
7	Describe the importance of bus interface unit (BIU) and execution unit (EU) an 8086 microprocessor. [LJIET] [DEC 2019 OLD]	4
8	Draw and Explain the block diagram of 8086. [LJIET**] [DEC 2019 OLD]**	7
9	Draw and explain internal architecture diagram of 8086 microprocessor. [LJIET] [**DEC 2021 OLD, JUN 2022 OLD]** Explain the architecture of the 8086 with a neat block diagram.[LJIET] **[FEB 2021 OLD]**	7
10	Describe the importance of bus interface unit (BIU) and execution unit (EU) in 8086 microprocessor. [LJIET] [**DEC 2021 OLD]** Describe the importance of bus interface unit (BIU) and execution unit (EU) of the 8086 microprocessor.[LJIET] **[SEP 2021 OLD]**	4,3
11	Describe the important flag bits of status register of 8086.[LJIET] **[SEP 2021 OLD]**	3
12	Explain the flag register of the 8086 microprocessor.[LJIET**][JAN 2023 OLD]**	4
13	What is segmentation? Explain about various segment registers of 8086..[LJIET**][JAN 2023 OLD]**	3
14	Draw the internal architecture block diagram of 8086 processor.[LJIET**][JAN 2023 OLD]**	4
15	List the different addressing modes of 8086 microprocessor..[LJIET**][JAN 2023 OLD]**	3
16	Explain the given pins of 8086. 1. ALE 2. DEN 3.MN/MX [LJIET**][JUN 2022 NEW]**	3
17	Explain the modes of operation of 8086 microprocessor.[LJIET**][JUN 2022 NEW]**	4
18	Explain the block diagram of 8086 microprocessor.[LJIET**][JUN 2022 NEW]**	7
19	1.List down various segment registers of 8086 microprocessor 2.Draw the format of a flag register of the 8086 µp. 3.What will be the physical address (PA), if CS and IP register contents of an 8086 microprocessor are 2500h and 0002h, respectively?.[LJIET**][JUN 2022 OLD]**	3
	TOPIC:80286 MICROPROCESSOR	
Sr. no	**DESCRIPTIVE QUESTIONS**	**Marks**
1	List the four major processing units in an 80286 microprocessor and briefly describe the function of each.[LJIET] [**DEC 2015 OLD]**	7
2	What is descriptor table? What is its use? Dedifferentiate between GDT and LDT.[LJIET] **DEC 2015, MAY 2017 OLD MAY 2019 OLD]** Differentiate between GDT and LDT.[LJIET] **[FEB 2021 OLD]**	7,3
3	Explain 80286 architecture.[LJIET] [**MAY 2015, MAY 2016]**	7
4	Differentiate between real mode and protected mode of an 80286 microprocessor[LJIET] [**DEC 2016 OLD]** Differentiate between the real mode and protected mode of the 80286 microprocessor.[LJIET] **[SEP 2021 OLD]**	4
5	Explain various addressing mode of 80286 microprocessor[LJIET][**DEC 2016 OLD]**	4

6	Explain the real mode and protected mode of the 80286 microprocessor. [LJIET][**NOV 2017 OLD MAY 2019 OLD]**	7
7	Define descriptor table with its use. [LJIET] [**DEC 2021 OLD]**	3
8	Explain the architecture of 80286 with a neat block diagram. [LJIET] [**DEC 2021 OLD, NOV 2021 NEW]**	7
9	What is the use of descriptor table in 80286 microprocessor? What is the purpose of the GDTR? [LJIET] **[SEP 2021 OLD]**	4
10	Explain the real mode and protected mode of the 80286 processor.[LJIET]**[JAN 2023 OLD]**	7
11	Explain the real mode and protected mode of the 80286 microprocessors. What is a descriptor table? What is its use? [LJIET]**[JUN 2022 OLD]**	4
	TOPIC:80386 MICROPROCESSOR	
Sr. no	**DESCRIPTIVE QUESTIONS**	**Marks**
1	Explain the architecture of the 80386 with a neat block diagram. [LJIET] [**MAY 2016 OLD NOV 2021 NEW]** Describe the architecture of the 80386 with a neat block diagram.[LJIET] **[FEB 2021 OLD]**	7
2	Explain paging mechanism of 80386. [LJIET][**DEC 2016 OLD]** Explain the paging mechanism in an 80386 microprocessor.[LJIET] **[SEP 2021 OLD, JUN 2022 OLD]**	7,4
3	Briefly explain virtual 8086 mode of 80386.[LJIET] [**DEC 2015 OLD]**	7
4	Explain the Page Table and Page Directory Entry with example.[LJIET] [**DEC 2015 OLD]** Explain the Page Table and Page Directory Entry in brief.[LJIET] **[FEB 2021 OLD]**	7,3
5	Explain virtual mode for 80386 [LJIET] [**MAY 2017 OLD]**	7
6	Briefly explain the architecture of the 80386 microprocessor. [LJIET] [**NOV 2017 OLD]**	7
7	What is page table? How it works? [LJIET] [**MAY 2018 OLD]**	3
8	Differentiate 80286 with 80386 microprocessor. [LJIET] [**MAY 2018 OLD]**	7
9	What is a descriptor table? What is it's main usage [LJIET] [**MAY 2018 OLD]**	3
10	Explain the paging mechanism in an 80386 microprocessor. [LJIET] [**MAY 2019 OLD]**	7
11	Draw and explain the architecture of 80386. [LJIET] [**DEC 2021 OLD]**	7
12	Explain format of the descriptor in 80386 with diagram. [LJIET] [**NOV 2021 NEW]**	3
13	Explain the concept of segmented memory. What are its advantages? [LJIET] **[SEP 2021 OLD, JUN 2022 OLD]**	3
14	List features of 80386 microprocessor. [LJIET]**[DEC 2022 NEW]**	3
	TOPIC:80486 MICROPROCESSOR	
Sr. no	**DESCRIPTIVE QUESTIONS**	**Marks**
1	Features of Pentium processor[LJIET] [**MAY 2015 OLD]**	3
2	Explain the architecture of Pentium processor [LJIET] [**MAY 2016 OLD]**	7
3	Draw and explain the architecture of Pentium processor. [LJIET] [**MAY 2018 OLD]**	7
4	List features of 80486 microprocessor.[LJIET] **[FEB 2021 OLD]**	3
5	What is the purpose of the TLB located within the Pentium class microprocessor? [LJIET] **[SEP 2021 OLD]**	3
6	List features of 80486 microprocessor [LJIET]**[DEC 2022 NEW]**	3