



LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034

U.G. DEGREE EXAMINATION – ALLIED

SECOND SEMESTER – APRIL 2022

UCA 2301 – MICROPROCESSOR

(21 BATCH ONLY)

Date: 27-06-2022

Dept. No.

Max. : 100 Marks

Time: 01:00 PM – 04:00 PM

SECTION A

1. Answer ALL

(5 x 1 = 5 Marks)

a)	State the difference between operand and opcode with example.	K1	CO1
b)	List the types of flags.	K1	CO1
c)	Define instruction cycle.	K1	CO1
d)	What is a counter?	K1	CO1
e)	List any three applications of microprocessor.	K1	CO1

2. Multiple Choice Questions

(5 x 1 = 5 Marks)

a)	Which is a non-maskable interrupt? i. Rst 7.5 ii. Trap iii. Rst 6.5 iv. INR	K1	CO1
b)	The main purpose of Accumulator Register of 8085 is i. Temporary data storage ii. Selection of peripheral iii. Storing instructions iv. Used as primary pointer	K1	CO1
c)	Which one of the following cycles are required to fetch and execute an instruction i. Clock cycle ii. Tri cycle iii. Instruction cycle iv. Memory cycle	K1	CO1
d)	The expansion of ISR is b. Interrupt Signal Register ii. Interrupt Sound Request iii. Internal Simple Routine iv. Interrupt Service Routine	K1	CO1
e)	The instruction that pushes the contents of the specified register/memory location on to the stack is i. PUSHF ii. POPF iii. PUSH iv. POP	K1	CO1

3. Fill in the blanks

(5 x 1 = 5 Marks)

a)	ALU unit performs ____ operations.	K2	CO1
b)	____ flag is set, if the result has an even number of 1's.	K2	CO1
c)	____ cycle is the time required to access the memory or I/O devices.	K2	CO1
d)	The drawback of counter is solved by using ____	K2	CO1
e)	____ is a group of instructions that will be used repeatedly in different locations of the program.	K2	CO1

4. True or False (5 x 1=5 Marks)

a)	The stack is a data storage area in RAM used by certain microprocessor operations.	K2	CO1
b)	The microprocessors are silicon chips with tiny electronics circuits.	K2	CO1
c)	The first machine cycle of every instruction is fetch cycle	K2	CO1
d)	First byte specifies opcode and second byte specifies operand in One-byte instruction	K2	CO1
e)	The mode of instruction which do not specify the operand in the instruction itself, is called Immediate instruction	K2	CO1

SECTION B

Answer any TWO of the following in 150 words (2 x 10 = 20 Marks)

5	Discuss about the advances in semiconductor technology.	K3	CO2
6	Explain about generating the control signals.	K3	CO2
7	Discuss about Memory read machine cycle with timing diagram.	K3	CO2
8	Explain about subroutines.	K3	CO2

SECTION C

Answer any TWO of the following in 150 words (2 x 10 = 20 Marks)

9	Explain in detail the organization of a microprocessor.	K4	CO3
10	Draw and explain about demultiplexing of address and data.	K4	CO3
11	Draw and explain the memory write machine cycle.	K4	CO3
12	Explain about stack and its operations.	K4	CO3

SECTION D

Answer any ONE of the following in 250 words (1 x 20 = 20 Marks)

13	Draw the 8085 pin out diagram and explain.	K5	CO4
14	Summarize about counters and time delays with its types.	K5	CO4

SECTION E

Answer any ONE of the following in 250 words

(1 x 20 = 20 Marks)

15	a. Write in detail about the 8085 instructions and its types (12 marks)	K6	CO4
	b. Express about CALL and RETURN instructions (8 marks)		
16	Develop the block and timing diagram of I/O read and Write machine cycle.	K6	CO4

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