Reg No.:_____   Name:_____

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY

Fifth semester B.Tech degree examinations (S) September 2020

Course Code: CS305

Course Name: MICROPROCESSORS AND MICROCONTROLLERS

Max. Marks: 100   Duration: 3 Hours

PART A

Answer all questions, each carries 3 marks.   Marks

1	Explain logical memory organization of 8086.	(3)
2	Explain memory read operation in minimum mode of 8086 with the help of a timing diagram.	(3)
3	Explain the usage of the following assembler directives with suitable example. a) EQU b)SEGMENT c)ASSUME	(3)
4	Explain the working of the following instructions with suitable example. a) IN b)SAR	(3)

PART B

Answer any two full questions, each carries 9 marks.

5		Write an 8086-assembly language program to find even numbers from an array of n, 8-bit numbers and store the even numbers in a separate array.	(9)
6		Explain maximum mode configuration of 8086 microprocessor	(9)
7	a)	Differentiate 8086 and 8088 microprocessors.	(4)
	b)	Explain 8086 macro definition and macro call with suitable example.	(5)

PART C

Answer all questions, each carries 3 marks.

8	Explain various categories of interrupts available in 8086.	(3)
9	Explain the interfacing of an IO device to 8086 using peripheral IO method.	(3)
10	Explain how the priority resolver block of 8259 select the request to be served next.	(3)
11	Explain output modes of 8279, programmable keyboard/display interface.	(3)

PART D

Answer any two full questions, each carries 9 marks.

12	a	Explain the Mode 2 operation of 8255.	(5)
	b	What are the activities done by 8086 on receiving an interrupt request?	(4)
13	a	What is meant by maskable and non-maskable interrupts?	(3)
	b	Write the role of 8259A, Programmable Interrupt Controller.	(6)

| 14 | | Interface two numbers of 16Kx8 EPROM and 2 numbers of 4Kx8 RAM to 8086. Select suitable address map. | (9) |

PART E

Answer any four full questions, each carries10 marks.

15		Describe Internal data memory organization of 8051 microcontroller.	(10)
16	a)	Explain PSW of 8051 microcontroller	(5)
	b)	Explain how external memories can be interfaced to 8051 microcontroller	(5)
17	a)	Explain the organization of stack in 8051 microcontrollers.	(5)
	b)	Explain the sources of interrupts of 8051 microcontroller.	(5)
18	a)	What is the role of IE and IP registers of 8051 microcontroller	(5)
	b)	Describe the following instructions of 8051 microcontroller.	(5)

a) AJMP   b) SJMP   c) XCHD   d) MOVX   e) SWAP

19	a)	Write an 8051 assembly language program to count the occurrence of a given byte in a sequence of n bytes.	(7)
	b)	Write the criteria for selecting a microcontroller.	(3)
20	a)	Explain the block diagram of 8254, programmable interval timer.	(6)
	b)	Explain the following addressing modes of 8051 microcontroller.	(4)

a) Register indirect   b) Indexed

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