Q. Code:808882

Reg. No. | | | | | | | | | | | | | |

B.E./ B. TECH.DEGREE EXAMINATIONS, MAY 2024

Fourth Semester

IT18402 – MICROPROCESSORS AND MICROCONTROLLER INTERFACING

(Information Technology)

(Regulation 2018/2018A)

TIME:3 HOURS **MAX. MARKS: 100**

COURSE OUTCOMES	STATEMENT	RBT LEVEL
CO 1	Develop programs in 8086 microprocessor by understanding its architecture, instruction set and interrupt process.	**5**
CO 2	Sketch the system bus structure of 8086 and multiprocessor configurations	**3**
CO 3	Design I/O and Memory interfacing units.	**5**
CO 4	Develop programs in 8051 microcontroller by understanding its architecture and instruction set.	**3**
CO 5	Design various interfacing units with 8051 microcontroller based systems.	**5**

PART- A(10x2=20Marks)

(Answer all Questions)

		CO	RBT LEVEL
1.	How is a status flag utilized by software?	**1**	**4**
2.	Write the generation of physical addresses in 8086.	**1**	**5**
3.	Detail the process of synchronization between 8086 and its co-processor.	**2**	**3**
4.	Enumerate the benefits of multiprocessor configurations.	**2**	**2**
5.	Identify the modes employed by the DMA processor for data transfer.	**3**	**4**
6.	Describe the utilization of the terminal count register.	**3**	**3**
7.	Mention the function of PSW in 8051.	**4**	**2**
8.	Create an 8051 Assembly Language Program (ALP) to multiply two numbers, such as 54H and 5AH.	**4**	**3**
9.	Differentiate between LED display and LCD display.	**5**	**2**
10.	Determine the purpose of the instruction MOVC A, @A + DPTR.	**5**	**3**

PART- B (5x 14=70Marks)

		Marks	CO	RBT LEVEL
11. (a)	Depict the internal structure of the 8086 microprocessor along with its operations and functionality.	**(14)**	**1**	**3**

(OR)

(b)	Explain the following with appropriate examples. i. Procedures (4) ii. Interrupts and interrupt service routines (5) iii. Linking and Relocation (5)	**(14)**	**1**	**3**
12. (a)	Illustrate the 8086 based minimum mode system with a neat diagram.	**(14)**	**2**	**3**
	(OR)			
(b)	Demonstrate the loosely coupled configuration with a neat diagram.	**(14)**	**2**	**3**
13. (a)	Explain the Functional diagram of Programmable Interrupt Controller in detail.	**(14)**	**3**	**3**
	(OR)			
(b)	Draw a circuit diagram to interface a keyboard and a seven segment LED using 8279.	**(14)**	**3**	**3**
14. (a)	Discuss in detail about the instruction sets of 8051 microcontroller.	**(14)**	**4**	**2**
	(OR)			
(b)	Classify the different addressing modes in 8051 microcontroller with an example.	**(14)**	**4**	**2**
15. (a)	Draw the diagram to interface a stepper motor with 8051 microcontrollers and explain. Write its ALP to run the stepper motor in both forward and reverse direction with delay.	**(14)**	**5**	**3**
	(OR)			
(b)	Demonstrate the different modes of operations in Intel 8051 timer/counter with suitable diagrams	**(14)**	**5**	**3**

PART- C (1x 10=10Marks)

(Q.No.16 is compulsory)

		Marks	CO	RBT LEVEL
16.	Develop an ALP to generate the cube of the given number.	**(10)**	**1**	**5**

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