A **Reg. No. :** | | | | | | | | | | | | |

Question Paper Code: U4806

B.E./B.Tech. DEGREE EXAMINATION, NOV 2024

Fourth Semester

Information technology

21UIT406 MICROPROCESSOR BASED SYSTEM DESIGN

(Regulations 2021)

Duration: Three hours Maximum: 100 Marks

Answer ALL Questions

PART A - (10 x 1 = 10 Marks)

1. How many address lines are available in 8086 CO1-U

   (a) 16 (b) 20 (c) 8 (d) 40

2. SOP Stands for CO1-U

   (a) Segment override prefix (b) Segment data register

   (c) Segment over predefine (d) Segment over program

3. NMI is edge _____ Input CO1-U

   (a) Triggered (b) Non triggered (c) o (d) 1

4. Single CPU is used for ---------- CO1-U

   (a) Closely Coupled (b) Loosely Coupled (c) Coprocessor (d) Multiprocessor

5. The Rate at which the bits are transmitted bits per second is called CO1-U

   (a) band (b) Transmission (c) Serial (d) Baud

6. Which one is not ADC Types CO1-U

   (a) Counter Type (b) Single Slope (c) Dual Slope (d) Timer Type

7. What is the result of the following arithmetic operation in the 8051 microcontroller? CO2-App

   MOV A, #50H
   MOV B, #20H
   ADD A, B

   (a) A = 70H (b) A = 30H (c) A = 20H (d) A = 50H

8. Which one is SFRs CO1-U

(a) PSW (b) SBUF (c) PCON (d) ALL

9. Microprocessor must wait until the key reach to a steady state CO1-U

(a) Key bouncing (b) key debouncing (c) polling (d) polishing

10. Find the program - Mov A R0, CPL A INC A CO2-App

(a) 1'Complement (b) Invalid Program (c) 2's complement (d) 0

PART – B (5 x 2= 10 Marks)

11. Develop an assembly language program to load the accumulator with a constant value. CO1 -U

12. Compare Minimum mode and Maximum Mode CO2-App

13. Outline on USART? CO1 -U

14. Develop a program to add two numbers using 8051? CO2-App

15. Summarize the steps followed to service an interrupt CO1 -U

PART – C (5 x 16= 80 Marks)

16. (a) List out the various types of Addressing modes in 8086 microprocessor and also explain each mode with suitable example. CO1 -U (16)

Or

(b) Explain in detail about Data transfer instruction and also write a sample program on LEA instruction (Load Effective Address) with detailed description. CO1 -U (16)

17. (a) Develop an assembly language programming for converting Code HEX Code to BCD Code and Vice-Versa CO1 -U (16)

Or

(b) Develop an assembly language program to check whether the given string is palindrome or not CO1 -U (16)

18. (a) Explain DMA controller using 8257 with a neat pin diagram along with detailed pin description and also list out their Features CO1 -U (16)

Or

	(b)	Summarize the programming steps for delay function and also explain the following : a. 8-bit COUNTER OPERATION b. 8-bit TIMER OPERATION c. List out the types of registers used for the above operations	CO1 -U	(16)
19.	(a)	List out various types of addressing modes in 8051 and explain in detail with suitable examples.	CO1 -U	(16)
		Or		
	(b)	With a neat diagram, explain any 7 groups in Special Function Registers of 8051 Microcontroller.	CO1 -U	(16)
20.	(a)	Develop an assembly language program for Interfacing a Smart Traffic Light control system using 8051 Controller	CO2-App	(16)
		Or		
	(b)	Write its ALP to run the stepper motor in both forward and reverse direction with delay using 8051 Microcontroller, Explain them with neat diagrammatical representation	CO2-App	(16)