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Question Paper Code: U4806

B.E./B.Tech. DEGREE EXAMINATION, NOV 2023

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. Stack it is a _____ Data Segment CO1-U
(a) FIFO (b) LIFO (c) PUSH (d) POP
2. Which is the not applicable for instruction 8086 MP CO1-U
(a) Loop (b) Branch (c) Logical (d) Indexed
3. Fetching is the next instruction while the current instructions executes is called----- CO1-U
(a) Pipelining (b) Macros (c) Group (d) PTR
4. The general data register CX stands for the program code _____ CO2- App
(a) CH,AL (b) CH,DL (c) CH,CL (d) AH, BH
5. BSR Mode for CO1-U
(a) Bit Set regular (b) Byte set read (c) Bit set reset (d) Bit set request
6. 8255A I/O Mode Multiprocessor is _____ CO1-U
(a) Mode 0 (b) Mode 1 (c) Mode 2 (d) all the above
7. Which pins are assigned to 8051 VCC and GND? CO1-U
(a)16,20 (b) 20,21 (c) 20,40 (d) 40,20

8. Calculate the Microprocessor speed, where microprocessor speed = CO2 -App
 Clock frequency(3 GHz)/ Number of clock cycles per
 instruction(4)_____
- (a) 750 mhz (b) 550 mhz (c) 800 mhz (d) 900 mhz
9. Find the program - MOV A R0, CPL A INC A CO2 -App
 (a)1's Complement (b) Invalid Program (c) 2's complement (d) 0
10. Which mode timer 2 operates as free running clocks CO1-U
 (a) Auto reload mode (b) Auto mode (c) Capture mode (d) capture auto mode

PART – B (5 x 2= 10Marks)

11. Differentiate between Align & Assume CO1-U
12. Compare Closely and loosely configurations CO2- App
13. What is USART? CO2 -App
14. Compare Microprocessor and Microcontroller CO2- App
15. Define Interrupt CO2 -App

PART – C (5 x 16= 80Marks)

16. (a) Explain the internal hardware architecture and pin representation of 8086 microprocessor with neat diagrammatical explanation. CO1-U (16)
- Or
- (b) Explain the following in detail with neat diagrammatical representation i) Bus interface unit ii) Execution unit CO1-U (16)
17. (a) Draw the input and output timing diagram of minimum mode and Maximum mode of 8086 MP. CO2- App (16)
- Or
- (b) Illustrate the configuration of loosely coupled system and closely coupled system CO2 -App (16)
18. (a) What is DMA ? Explain DMA Based data transfer using DMA Controller using through input and output peripheral device CO1-U (16)

Or

- (b) Explain in details interfacing and types with summarize minimum 3 techniques CO1-U (16)
19. (a) Write the Arithmetic logic programming for arithmetic Operations of two 8-bit numbers using 8051 Microcontroller. CO2 -App (16)
- Or
- (b) Find the amount of time delay in the DELAY subroutine generated by the timer. Assume that XTAL = 11.0592 MHz. And also, to explain in detail about the Interrupt handling in 8051 Microcontroller. CO2- App (16)
20. (a) Write the ALP for arithmetic Operations of two 8-bit numbers (Addition, Subtraction, Multiplication and Division) using ARM processor and 8051Microcontroller. And also draw the pin, architecture of 8051 with Description. CO1- U (16)
- Or
- (b) Explain in detail about Liquid crystal display interfacing with the help of pin description and LCD connection with 8051. CO1- U (16)

