

Register No.:

713

April 2023

*Time – Three hours
(Maximum Marks: 100)*

- N.B.**
1. Answer all questions under Part-A. Each question carries 3 marks.
 2. Answer all the questions either (A) or (B) in Part-B. Each question carries 14 marks.

PART – A

1. What is ALU?
2. How many ports are available in 8051? List them with their byte addresses.
3. What are the instructions used to access external RAM.
4. Write an ALP to perform 8 bit subtraction.
5. List the SFR's associated with serial communication.
6. Write an 8051 ALP to get a byte of data from port 2 and send it to port 1 continuously.
7. What is BSR mode of 8255? Write the BSR control word format.
8. What is the use of DAC ? Name the DAC IC.
9. Name the type of architecture of PIC microcontroller.
10. What is meant by Raspberry pi?

PART – B

11. (a) (i) Explain the memory organization of 8051. (10)
(ii) Write the comparison of Microprocessor and Microcontroller.(4)

(Or)

- (b) (i) Draw the Pin diagram of 8051.(4)
(ii) Explain the features of Microcontroller. (10)

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12. (a) (i) Write an 8051 ALP to perform addition and subtraction of 16 bit numbers. (7)
(ii) Explain time delay routine using two registers. (7)
(Or)
- (b) (i) Write an assembly language program to convert BCD number to HEX number.(7)
(ii) Explain the instructions used to access the external memory.(7)
13. (a) (i) Write down the bit and byte addresses for I/O ports. (7)
(ii) Explain I/O port programming with example. (7)
(Or)
- (b) (i) Explain in detail about serial port programming.(7)
(ii) Explain the modes of serial communication.(7)
14. (a) (i) How ADC is connected to 8051? Draw the interfacing diagram. (7)
(ii) Explain the steps to be used for getting data from ADC. (7)
(Or)
- (b) (i) Explain the steps to scan the matrix keyboard in the flowchart form. (7)
(ii) Draw the signal configuration of 8255 and discuss about the 8255 ports. (7)
15. (a) (i) How PIC microcontroller is superior over 8051?(3)
Write down the additional components present in the PIC microcontroller? Explain. (7)
(ii) List the applications of PIC microcontroller. (4)
(Or)
- (b) (i) Explain the following :
(a) Arduino UNO (b) Ethernet (c) USB Connector (d) SOC
(e) SBC (10)
(ii) Write about parallel communication. (4)