

EE2354 Microprocessors and Microcontroller Important Questions – 2013 Edition

UNIT-1 8085 MICROPROCESSOR

1. Describe the functional pin diagram of 8085. (16)
 2. Describe the functional block diagram of 8085. (16)
 3. Explain the 8085 interrupt system in detail. (16)
 4. Explain various machine cycles supported by 8085. (16)
 5. a) With suitable examples explain how I/O devices are connected using memory mapped I/O and peripheral I/O. (10)
b) Design a microprocessor system to interface an $8K \times 8$ EPROM and $8K \times 8$ RAM. (6)
 6. Draw timing diagrams for the following instruction with appropriate control and status signal. Explain in brief. CALL 2000 (16)
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UNIT-2 PROGRAMMING OF 8085 PROCESSOR

1. Explain the addressing modes of 8085 with example. (16)
 2. Explain the Different types of instruction in 8085. (16)
 3. i) Write a program to arrange /n numbers in ascending order. (8)
ii) Write a program to unpack a two digit BCD number stored at memory location 1C00H. (8)
 4. Explain the BCD to Decimal code conversion technique and write 8085 assembly language program for the same. (16)
 5. Explain the BCD to Seven Segment code conversion technique and write 8085 assembly language program for the same. (16)
 6. i) Write a program to calculate the factorial of a number between 0 to 8. (8)
ii) Write a program to find the number of negative, zero and positive numbers. (8)
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UNIT- 3 PERIPHERAL INTERFACING

1. Explain any one of the modes of 8255 in detail. (16)
 2. With neat block diagram explain PPI. (16)
 3. i) Using model, write a program to communicate between two microprocessors using 8255. (10)
ii) Show the control word format of 8255 and explain how each bit is programmed. (6)
 4. With neat block diagram explain the functions of 8259. (16)
 5. i) Bring about the features of 8251. (6)
ii) Discuss how 8251 is used for serial communication of data. (6)
iii) Explain the advantages of using the USART chips in microprocessor based systems. (4)
 6. Design an interface circuit needed to connect DIP switch as an input device and display the value of the key pressed using a 7 segment LED display. Using 8085 system, write a program to implement the same. (16)
 7. Explain the 7 segment LED interface with microprocessor. (16)
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8. i) Explain the advantages of using the keyboard and display controller chips in microprocessor based system. (6)
 - ii) Write a program using RST 5.5 interrupt to get an input from keyboard and display it on the display system. (6)
 - iii) Use RST 5.5 instead of RST 7.5 and change mask pattern accordingly.(4)
 9. i) Explain the working of 8254 timer and write a program using it to generate a square waveform of period 3 msec. (10)
 - ii) Describe with any one of the mode configurations of 8254 timer in detail.(6)
 10. Explain how to convert an analog signal into digital signal. (16)
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UNIT-IV MICROCONTROLLERS 8051

1. Describe the architecture of 8051 with neat diagram. (16)
 2. i) Discuss the peripheral interface of 8051. (8)
 - ii) Explain the interrupt structure of 8051 microcontroller Explain how interrupts are prioritized. (8)
 - i) What is the difference between the Microprocessors and Microcontrollers?(8)
 - ii) Explain the I/O port structure of 8051. (8)
 3. i) Explain the different serial communication modes in 8051. (8)
 - ii) Explain the memory structure of 8051. (8)
 4. States various modes available for timer in 8051. (16)
 5. Explain the functional pin diagram of 8051 Microcontroller. (16)
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UNIT V MICRO CONTROLLER PROGRAMMING & APPLICATIONS

1. i) Write 8051 ALP to read data from port I when negative edge triggered at INTO and supply the data to port 2 by masking the upper 4 bits. (8)
 - ii) Write 8051 ALP to transmit 'Hello World' to PC at 9600 baud for external crystal frequency of 11.0592MHz. (8)
 2. With a neat circuit diagram explain how a 4 x 4 keypad is interfaced with 8051 microcontroller and write 8051 ALP for keypad scanning. (16)
 3. Draw the schematic for interfacing a stepper motor with 8051 microcontroller and write 8051 ALP for changing speed and direction of motor. (16)
 4. Draw the schematic for interfacing a servo motor with 8051 microcontroller and write 8051 ALP for servo motor control. (16)
 5. i) Explain addition and subtraction instructions of 8051. (8)
 - ii) Explain various types of jump instructions according to range. (8)
 6. i) Write a 8051 ALP to find Fibonacci series of N given numbers. (8)
 - ii) Write a 8051 ALP to find the average of given N numbers. (8)
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