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(12) (4)

Electronics and Comm Engg Deptt, NIT Hamirpur, HP
ECD - 311 Microprocessor Theory & Applications
Attempt any 5 questions. Give importance to specifics and details.

Time Limit: 180mins

Max Marks: 50

1. Draw the timing diagram for CALL 1234H present at the location FEDCH. [10]

2. Write the control word format for 8155. Draw an interfacing circuit for interfacing one seven-segment LED display and one 8-bit switch using Port A and B of the 8155. Further write a program to complete the communication with the interface. [10]

3. Draw a clean memory & I/O interface diagram with 8085 for the following specifications:
8-bit Switch: 3456H
7-Segment Display: 1234H
Data ROM (1K Bytes): 4000H to 7FFFH
Data RAM (2K Bytes): 8000H to BFFFH
Program ROM (4K Bytes): 8000H to FFFFH
Also discuss the interface method used for each external chip. [10]

4. Program the onboard 8085 processor on a drone to do the following:
a. Auto navigate from source to destination using GPS and Camera
b. Take a high resolution image of a red color house when spotted
c. Count the number of blue houses on the way
Use at least 3 interrupts to accomplish the tasks. [10]

5. Write short notes on the architecture of 8086, its programmer's model and addressing modes. Write at least 5 differences between 8085 and 8086. [10]

6. a. Write short notes on 8259 PIC. Also explain its interrupt handling capability.
b. Write and explain the architecture and different modes for 8255 with the help of control words. [10]