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2002 SCHEME

EE763

Seventh Semester B.E. Degree Examination, June-July 2009
Peripherals and Micro Controllers

Time: 3 hrs. Max. Marks:100

Note: *Answer any FIVE full questions*

1 a. Explain absolute, partial and linear select decoding techniques with respect to interfacing I/O devices to microprocessor. Mention the advantages and limitations of each type of decoding. **(06 Marks)**

b. Using a 3 to 8 decoder, design an absolute decoding circuit to select input device at address FFF0H and output device at address FFF1H. **(06 Marks)**

c. With a block diagram explain the architecture of 8155 multipurpose programmable devices. **(08 Marks)**

2 a. Explain the following with respect to 8279 keyboard – display interface:
i) Keyboard modes ii) display modes. **(06 Marks)**

b. Design a 8085 – 8279 based system to interface 11 key keyboard and 6 seven segment display units. Write initialization instruction to initialize 8279 in keyboard display mode with encoded scan, N key roll over and right entry display mode. Adjust the scan frequency to 100 kHz. Input clock frequency is 3 MHz. **(08 Marks)**

c. With timing diagrams explain different modes of 8254 programmable interval timer. **(06 Marks)**

3 a. Briefly explain different modes of operation of 8255 programmable peripheral interface. Explain how bi-directional communication can be established between two microcomputers using 8255. **(10 Marks)**

b. With a block diagram explain the architecture of 8259 A programmable interrupt controller. **(10 Marks)**

4 a. With expanded block diagram explain transmitter and receiver sections of 8251 USART. **(06 Marks)**

b. Write the status word format of 8251 and explain. **(06 Marks)**

c. With a block diagram explain the architecture of 8237 DMA controller. **(08 Marks)**

5 a. Explain the following with respect to 68HC11 microcontroller:
i) The programming model.
ii) I O ports.
iii) Interrupts. **(10 Marks)**

b. With examples explain different addressing modes of 68HC11. **(10 Marks)**

6 a. Explain the following instructions of 68HC11 with examples:
i) LDX and STX ii) DEC and INC iii) PSH and PUL
iv) BCLR and BSET v) LSR and ASR **(10 Marks)**

b. A set of 8 data bytes are stored in memory starting from C110H. Write a program to transfer the entire block of data to memory locations starting from C130. Write flow chart. **(10 Marks)**

7 a. What are the different fields of information in a source statement? Explain with examples. **(04 Marks)**

b. What are directives? Write and explain the basic, most frequently used assembler directives. **(10 Marks)**

c. Using stack write a program to exchange the numbers in accumulators A and B. Draw the stack diagram. **(06 Marks)**

8 a. Explain different subroutine parameter passing techniques. **(06 Marks)**

b. With necessary diagrams, explain input and output port design of parallel I/O. **(08 Marks)**

c. Write a note on 68HC11 modes. **(06 Marks)**

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