

BIRLA INSTITUTE OF TECHNOLOGY AND SCIENCE, PILANI
II SEMESTER 2013-2014
EEE/CS/INSTR F241 MICROPROCESSOR PROGRAMMING AND INTERFACING
QUIZ #6(OPEN BOOK)

MARKS:10

09-04-2014

DURATION: 30 MIN

ID:	NAME: SOLUTIONS	SEC:
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Note: Marks for each question is stated in the question.

Q1. Address 00080H in the interrupt vector table contains 4A24H and address 00082H contains 0040H.
(2)

- a) To what interrupt type (vector) in hex, do these locations correspond?
- b) What is the starting address of the ISR?

A) 20H or 32 (decimal)

B) 0040:4A24 OR 04E24H

Q2. Write the instructions to initialize counter 2 of 8254 to produce a 1.2 ms wide low strobe pulse on its output pin when it receives a trigger input on its GATE input. The input frequency of the counter is 2.456MHz and the base address is 0FF01H.
(4)

Clock frequency = 2.456MHz

Frequency required: $1/1.2 \text{ ms} = 833.33 \text{ Hz}$

Count required: $2456000/833.33 = 2947$

Use counter in mode1, write LSB and MSB and count value in BCD

Control word: 10110011

MOV AL,0B3H

MOV DX,0FF07H

OUT DX,AL

MOV DX,0FF05H

MOV AL,47H

OUT DX,AL

MOV AL,29H

OUT DX,AL

Q3. The CPU is capable of fetching 16 bits of data from peripheral devices in one clock cycle. Draw a schematic to interface 16 bit ports using 8255 to 8086. The port A address is F0H. Use following components for decoding purpose, 5 input NAND gate (01), 2 input NAND gate (02) and inverters (05). Assume fixed port address decoding.
(4)

