1058

B.E. (Electronics and Communication Engineering)
Fourth Semester
EC-415: Microprocessors

Time allowed: 3 Hours   Max. Marks: 50

NOTE: *Attempt five questions in all, including Question No. I which is compulsory
and selecting two questions each from Section Part.*

x-x-x

Q1: a. Can an input and output port have the same address? Explain.
b. What is memory mapped I/O and I/O mapped I/O? which is advantageous?
c. If the INTEL 8085 microprocessor adds 89H and 79H specify the contents of accumulator and status of
S, Z and CY flags.
d. Differentiate hardware and software interrupts.
e. What is DMA? What is its use?   (5*2)

Part-A

Q2: (a) With examples explain various addressing modes of 8085.   (5)

   (b) Explain the function of the following pins of 8085
i) Ready ii) HLDA iii) ALE iv) SOD v) IO/M   (5)

Q3: (a) Interface 8K×8 memory to 8085 using 2K×8 memory chips. Select starting
address as 8000H. Give address range of all the chips used.   (5)
   (b) What are various data transfer techniques between 8085 and I/O's. Discuss each briefly.(5)

Q4: (a) WAP to find number of zero's in every element of an array of ten 16-bit binary numbers stored in
consecutive memory locations. Replace the number with FFH, if the count is greater than 0Ah, otherwise
replace the number with 00H.   (5)

   (b) Write a program for to convert a BCD number stored at 0400H to binary number.   (5)

Part-B

Q5: (a) Discuss step-wise how 8085 responds when it gets interrupted? Explain in detail the various
sources of interrupts of 8085.   (5)
   (b) Discuss in detail the timing diagram for the execution of CALL 2050.   (5)

Q6: (a) Explain the function of the following in IC 8259   (5)
i) CAS0-2 ii) ICW1 and ICW2 iii) Registers in 8259

   (b) Write the control words for IC 8253 to
i) set counter 1 as BCD counter to work in mode 3 read fly for read operation
ii) set counter 2 as binary counter to work in mode 4 with read/write LS byte
of counter option.   (5)

Q7: (a) List the major components of 8259A interrupt controller and briefly explain their function.
                                                                        (5)

   (b)) Write a programme to generate square wave of period 50msec with 66% duty cycle at any port
C pin of 8255.   (5)