

B.E. PRINTING ENGINEERING
3RD YEAR SECOND SEMESTER EXAMINATION, 2017
MICROPROCESSORS

Time : Three hours

Full Marks : 100

Answer Question No. 1 and any *four* from the rest.

1. Answer any five from below: 5 X 4 = 20
 - a. What is the function of the control bus ?
 - b. If an output and input port can have the same 8-bit address, how does the 8085 microprocessor differentiate between the ports?
 - c. What is the difference between SUB and CMP instructions.
 - d. How microprocessor distinguish between opcode fetch and memory read?
 - e. What are the functions of 'RESET IN' and 'RESET OUT' pins in 8085?
 - f. What are the differences between microprocessor and microcomputer?
 - g. What is Interrupt Service Routine ?
 - h. Describe instruction LDA 4050H .

2. Explain the functions of ALE for demultiplexing AD0-AD7 of 8085 microprocessor. Draw and describe the pin diagram of 8085 microprocessor. Describe different flag registers of 8085 microprocessor. 5+10+5 = 20

3. Calculate the delay obtained (assume system clock frequency = 4 MHz).


```
MVI B, 60H
LOOP2: MVI C, ABH
LOOP1: DCR C
JNZ LOOP1
DCR B
JNZ LOOP2
```

Explain different machine cycles for execution of RET instruction. What are the differences between Interrupt and Polling? 10+6+4=20

4. What do you mean by peripheral mapped I/O and memory mapped I/O? Explain the general steps to interface a Successive-Approximation A/D converter AD558 with 8085 microprocessor. Draw the schematic and write the 8085 opcodes for interfacing 8085 microprocessor with A/D converter using status check. 4+6+10=20

5. Explain the following instructions with proper example.
 - a) DAD b) LDAX c) LHLD d) RIM.

Explain ADI 0FFH and ANI 00H instructions. How stack has been used during the execution of CALL. 8+4+8 = 20

6. Differentiate between vectored and non-vectored interrupts. Can the microprocessor can be interrupted again before the completion of first interrupt service routine? Describe different types of microprocessor-controlled data transfer. What is the function of interrupt enable flip flop? $5+5+5+5=20$
7. Describe different states in a tri-state buffer and how data can flow through it. Write the steps and draw the timing diagram of memory read machine cycle. List all addressing modes of 8085 microprocessor and explain each of them with an example. Write a program to subtract two 16-bit values in 8085 microprocessor. $4+6+5+5= 20$
8. Write the 8085 codes for to compute Fibonacci series. What is the role of stack pointer during execution of RET instruction in 8085 microprocessor. What is meant by 'nesting' of sub-routines?
 $10+6+4=20$