

- NOTE : 1. Figure should be Neat and labeled.
 2. All Questions are compulsory.
 3. Right side indicates marks.

Q.1 Answer any 2 from following.

(10)

1. List and explain types of memories.
2. Explain the concept of memory organization with control lines.
3. Write a short note on Tristate devices.
4. Explain the function of buffers, encoder, decoder, latches.

Q.2 Answer any 2 from following.

(10)

1. Draw the functional block diagram of 8085 microprocessor.
2. Explain the working of following units of 8085:
 - a. ALU
 - b. Temporary register
 - c. Program counter
 - d. Instruction register
 - e. Data/ address register
3. Explain the functions of following pins of 8085:
 - a. X1 & X2
 - b. READY
 - c. HOLD
 - d. SOD
 - e. ALE

4. Draw the pin diagram of 8085 IC.

(10)

Q.3 Answer any 2 from following.

1. Trace the following program and fill in the blanks.

```

MVI A, 06H
MVI E, 05H
ADD E
MOV C, E
ADI 01H
STA 4001H
MOV D, A
RST1
  
```

RESULT:

- i) Reg. E=-----
- ii) Reg. C=-----
- iii) Reg. A=-----
- iv) Reg. D=-----
- v) 4001H=-----
2. Flag register contain data 3CH interprets its meaning.
3. Explain the working of following instructions of 8085:
 - a. STC
 - b. ADD r
 - c. DAA
 - d. XRA M
 - e. CMP r

4. Write a microcontroller Program to find the zeros in reg. R2.

Q.4 Answer any 2 from following.

1. Explain the concept of cache memory.
2. Explain the concept of structure and function.
3. Explain the features of PCI bus.
4. Explain the benefits of RAID.

Q.5 Answer any 2 from following.

1. Give features of 8051 microcontroller.
2. Define microcontroller and state advantages of microcontroller over microprocessor.
3. Draw pin diagram of 8051.
4. Draw the architecture of 8051.

Q.6 Answer any 2 from following.

1. List and explain any two addressing modes of 8051 microcontroller.
2. Explain the function of following instructions of 8051:
 - a. XRL <desti>, <source>
 - b. MUL AB
 - c. SWAP A
 - d. MOV DPTR, #data 16
 - e. ' DJNZ <source>, <addr>
3. Write a microcontroller program to subtract two 8-bit numbers stored at memory location 3000H and 3001H store the result at 3002H.
4. Write a microcontroller program to check whether given number is divisible by 8.

Q.7 Answer any 3 from following.

1. Draw & explain the organization of ALU
2. Explain Sign flag & Parity flag with Eg.
3. Explain Hardware interrupts of 8085.
4. Give the applications of microcontroller.
5. Write a microcontroller program to add two 8-bit numbers stored at memory location 3000H and 3001H store the result at 3002H.
6. Explain the working of following instructions of 8085:
 - a. LHLD 16-bit addr
 - b. MVI M 8-bit data
 - c. RRC
 - d. XCHG
 - e. JMP addr