COMPUTER SCIENCE
PAPER - II (D-9)

| Time : 3 Hours | 4 Pages | Max. Marks : 50 |

Instructions : (1) *All questions are compulsory.*
(2) *Figures to the right indicate full marks.*
(3) *Draw neat diagrams wherever necessary.*
(4) *Use of any type of calculator is not allowed.*
(5) *Comments are must in Assembly Language Programs.*

1. (A) Select correct options and rewrite the following :

(a) The register in 8085 Microprocessor that keeps the track of the address of next executable instruction is _____ .   1

(i) Program Counter

(ii) Stack Pointer

(iii) Program Status Word

(iv) Instruction Register

(b) The PUSH PSW instruction of 8085 shall _____ the stack pointer.   1

(i) Increment by two bytes

(ii) Decrement by two bytes

(iii) Un affect

(iv) None of these

(c) 8051 Microcontroller IC have _____ number of 8 bit I/O ports.   1

(i) 1

(ii) 2

(iii) 4

(iv) 8

(d) The mobile phone uses _____ transmission technology. 1
    (i) Radio
    (ii) Microwave
    (iii) Infrared
    (iv) Satellite

(B) Solve **any two** of the following :
  (a) Explain function of following pins of 8085 Microprocessor : 3
    (i) $\overline{WR}$
    (ii) HLDA
    (iii) INTR
  (b) Enlist three types of Hubs. Write its functions in one sentence. 3
  (c) What is Microcontroller ? Write any two of its advantages over Microprocessor 3

2. (A) Answer **any two** of the following :
  (a) Write any three functions which accumulator perform other than any other general purpose register in 8085 Microprocessor. 3
  (b) Considering following points explain the given instruction.
    Instruction : LHLD 16 bit address
    (i) Group of Instruction
    (ii) Addressing Mode
    (iii) Number of Bytes Required
    (iv) Flags Affected
    (v) Explain with an example 3
  (c) State three expanded features of 8052 over 8051 Microcontroller. 3

(B) Answer **any one** of the following :
  (a) Explain any four characteristics of Transmission Media. 4
  (b) Accumulator contain data FFH and register B contain data 02H. Write the status of various flags and content of accumulator after execution of ADD B instruction 4

3. (A) Solve **any two** of the following :
  (a) Write functions of following register of 8085 Microprocessor : 3
    (i) Program Counter
    (ii) Stack Pointer
    (iii) Temporary Register

(b) Give any two examples of following addressing modes :
   (i) Register Indirect Addressing Mode
   (ii) Direct Addressing Mode
   (iii) Immediate Addressing Mode   3
(c) What is meant by Protocol ? Explain concept of TCP/IP protocol.   3

(B) Answer any one of the following :
   (a) Explain STAR and RING Topologies with suitable diagram.   4
   (b) Explain with diagram memory register map of 8051 Microcontroller.   4

4. (A) Answer any two of the following :
   (a) Distinguish between Maskable and Nonmaskable interrupts any three points.   3
   (b) The flag register of 8085 microprocessor contain data 55H. Interpret its meaning.   3
   (c) Distinguish between STP and UTP cables. (Any three points)   3

(B) Answer any one of the following :
   (a) Accumulator contain data ABH and register B contain data 55H. What will be the contents of accumulator after execution of each following instruction independently ?
      (i) XRA B
      (ii) CMP B
      (iii) ADD B
      (iv) CMA   4
   (b) Explain advantages of following features of the Pentinum Processor :
      (i) Dual pipelining
      (ii) On-chip caches
      (iii) Branch prediction
      (iv) 64 bit data bus   4

5. Answer any two of the following :
   (a) Write an Assembly Language Program to double the contents of each memory location in the memory block stored from memory location 1220H to 1230H. Store the result at same memory location.   5
   (b) Write an Assembly Language Program to check whether the given 16 bit number stored in consecutive memory location beginning with lower byte 1200H is palindrome or not.
   It the number is palindrome then store FFH at 1210H memory location otherwise store 00H at same memory location.   5

(c) Study the given program and answer the questions given below : 5

Label	Mnemonics/Operand
	MVI B, 0A H
	LXI H, 2000 H
	MVI A, 01H
loop	MOV M,A
	INX H
	DCR B
	JZ stop
	ADI 02H
	JMP loop
stop	HLT

(i) Write the purpose of the program.

(ii) Write comments for each instructions used in the program.

(iii) Write the result along with their corresponding memory locations.

OR

5. Answer any two of the following :

(a) Write an Assembly Language Program for 8 bit number stored in memory location BABAH. Separate the two nibbles and multiply it. Store the result in memory location DADAH. 5

(b) Write an Assembly Language Program to find the sum of series. Length of series is stored in memory location 1500H and series begins from memory location 1501H.

Store the 16 bit sum from memory location 1600H begining with lower order byte. 5

(c) Study the given program and answer the questions given below :

```
STC
CMC
LXI B, 1234H
MOV A, B
RAR
MOV H, A
MOV A, C
RAR
MOV L, A
HLT
```

(i) Write the purpose of the program. 2

(ii) Write contents of various registers used. 2

(iii) Write comments of various instructions used in the program. 1