Class: 12th **Subject : Computer Science II**

Success Key School & Colleges
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Time: 2.00 hrs **Marks : 50**

Q. 1 (A) Select the correct alternative and rewrite : **(4)**

a) In 8085 Microprocessor _____ Pin in used to demultiplexing of address/data bus?
i) S_0 ii) ALE
iii) IO/$\overline{M}$ iv) HOLD

b) After the execution of POP rp instruction, SP gets _____
i) Incremented by one ii) Decremented by one
iii) Incremented by two iv) Decremented by two

c) 8051 _____ Bit Micro -Controller
i) 8 ii) 4
iii) 16 iv) 32

d) In _____ Topology, all devices are connected to a central hub.
i) Ring ii) Star
iii) Bus iv) None of these

B) Answer any two of the following : **(6)**

a) Explain the terms in a Micro-computer :
i) Address Bus ii) Data Bus iii) Control Bus

b) Explain the addressing modes of the following instructions of 8085 Micro-processor
i) STAXrp ii) CMA iii) LHLDaddr

c) State any six applications of a Micro-Contoroller.

Q.2 (A) Answer any two : **(6)**

a) Explain the function of the following registers in 8085 Micro-Processor :
i) Stack Pointer ii) Instruction register iii) Program counter

b) Explain the following instructions of 8085 Micro-processor with suitable example of each :
i) LXI rp ii) XRA r iii) RLC

c) Explain in brief, any three situations where multiplexing is useful for data transmission.

B) Answer any one of the following : **(4)**

a) Write the functions of following units in 8085 Micro-processor
i) ALU ii) Timing and Control
iii) Serial I/O Control iv) Instruction Register and Decoder

b) Explain the advantages of the following features of the pentium processor
i) Dual Pipelining ii) On Chip Caches
iii) Branch Prediction iv) 64 bit Data Bus

Q.3 (A) Answer any of two following (4)

a) State the conditions of IO/$\overline{M}$, S_0 and S_1 signals of 8085 Micro-processor for the following operations.
   i) MEMORY READY ii) I/O WRITE iii) I/O READ

b) Describe in brief function of following pins in 8085 Micro-processor.
   i) READY ii) CLKOUT iii) $\overline{WR}$

c) Explain the operation of token ring in networking with a suitable diagram.

B) Answer any one of the following : (4)

a) What is a T-state? Explain the three steps in execution of an instruction in a Micro-processor

b) What is a Micro-controller ? State any six features of 8051 Micro-controller.

Q.4 (A) Answer any two of the following : (8)

a) The accumulator in 8085 Micro-processor contains the data. 78H and register D contains data 33H. What will be the content of accumulator alter execution of each of the following instructions independently.
   i) SUB D ii) AND D iii) CMA

b) Explain the following instruction of 8085 Micro-processor with suitable example of each :
   i) POP rp ii) SPHL

c) Explain the following connectivity devices :
   i) Router ii) Repeater

B) Answer any one of the following : (4)

a) Explain the following attributes of a transmission medium:
   i) Band Width ii) EMI
   iii) Bond Usage iv) Attenuation

b) What is meant by a protocol? Explain the concept of TCP/IP Protocol.

Q.5 A) Answer any two of the following : (10)

a) Write an assembly language program to multiply the content of 2000H by the content of 2000H. store the 16 bit result in the memory location 2010H and 2011H.

b) Write an assembly language program to add the four byte number starting from C000H with another four byte number starting from C100H. Store the four byte result starting from C200H and carry at C204H.

c) Write an assembly language program to count the odd numbers in a memory block starting from 2300H to 2320H. Store the count at memory location 2400H.

OR

a) The memory block starts from 3000H and 3100 H each containing 16 bytes. Write on assembly language program to exchange the content of these blocks.

b) A memory block from 4000H containing 16 Hexadcimal number. Write an assembly language program to count the number which has identical nibbles, stores to count in memory location 4010H.

c) Write an assembly language program to test weather the data DCH is present in the memory block which starts from 2000H. If the data is present in blocks the HL pair should contain its address otherwise it should contain FFFFH.
(Test for the first occurance only)