

N.B.

1. Question No: 1 is compulsory.
2. Solve any three questions out of remaining questions.
3. Assume suitable data where necessary.

Q. 1 (a) Explain need of Assembler and compiler and their comparison. 05M

Q. 1(b) Draw and Explain the Flag register of 8086 $\mu$ p? 05M

Q. 1 (c) Write a program to display "P" on the screen of IBM PC. Use INT 21H function AH =02 and DL= character to display. Explain the logic of the program. How will you alter the character to be displayed? 05M

Q.1 (d) If 32K RAM (2 chips of 16K each) are interfaced with 8086. Assuming that last physical address of RAM is FFFFFH, what will be starting and end address of each chip? 05 M

Q.2 (a) Explain Maximum mode of 8086  $\mu$ p. Draw timing diagram for Read operation in maximum mode. 10 M

Q.2 (b) Write a program to find maximum number from an array of 10 numbers. Assume that the numbers are 8 bit wide. 10 M

Q.3 (a) Describe the importance of 8257 DMA controller. Explain the Data transfer modes of 8257 DMA controller 10 M

Q.3 (b) Write a program to find strength of Even and Odd numbers among the series of 10 numbers. 10 M

Q.4 (a) Draw and Explain the interfacing of Math co-processor with 8086. 10 M

Q.4 (b) Draw and Explain the interfacing of ADC 0809 with 8086 Microprocessor using 8255. 10 M

Q.5 (a) Suggest hardware and write a program to generate a square wave at the output of DAC 08 which is interfaced with 8086 CPU. How will you ensure bottom edge of 0 V and upper edge

of 3.6 V for the square wave generated? Comment on method of changing the frequency of the square wave generated. 12 M

Q.5 (b) Draw and explain the Block diagram of microprocessor based system. 08M

Q.6 (a) Design an 8086 based system with 32K ROM (2 chips of 16K). Draw the memory map of the system designed. 10 M

Q.6 (b). Explain salient features of Programmable Interval Timer 8254. What are different modes of operations ? Explain in brief. 10 M

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