

(3 Hours)

Total Marks = 80

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 assembly language and compare with high level languages 05M

Q. 1(b) What is memory segmentation of 8086? Explain in brief. 05M

Q. 1 (c) Write an 8086 based program to read a character from keyboard of IBM PC and display it on the screen. Use INT 21H, function AH=07 that reads character input without echo in reg. AL and function AH= 02 to display a character stored in register DL. Explain logic of the program in brief. 05M

Q.1 (d) If (CS) = 5000H, (DS) = 6000H, (SS)= 7000H and (ES) = 8000H, draw the memory map of 8086 cpu with starting and end physical address of each segment. 05M

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

Q.2 (b) Ten, 8 bit numbers are stored in data segment. Write an 8086 based program to check whether at least one number out of these numbers matches with 20H or not. If match is found make AH =00H otherwise AH= FFH 10 M

Q.3 (a) Describe the features of Programmable Interrupt Controller 8259. What is master slave configuration of 8259 ? . 10 M

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

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

Q.4 (b) Draw and Explain the interfacing of DAC 08 with 8086 Microprocessor. 10 M

Q.5 (a) If analog voltage of 3.2V is connected to the IN3 channel of ADC 0809. Suggest hardware and write a program to convert analog voltage to its digital equivalent and store the value in AL register. Comment on the digital equivalent expected. 12 M

Q.5 (b) What are different types of buses in microprocessor based system? Discuss their role in the system in brief. 08M

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

Q.6 (b). Explain salient features of Programmable Interval Timer 8255. What are different modes of operations ? Explain in brief. 10 M