



PART B — (5 × 16 = 80 marks)

11. (a) (i) List the major components of 8085 Microprocessor and explain the functions of each component. (8)
- (ii) Ten numbers are stored in memory locations starting at xx60h. Write an 8085 assembly language program to check whether the stored numbers are positive or negative. (8)

Or

- (b) (i) List any four conditional CALL and conditional return instructions and give an example for each. (8)
- (ii) Write an 8085 assembly language program to convert the hexadecimal numbers to 7-segment code. (8)
12. (a) (i) Explain the Bus Interface Unit and Execution unit of 8086 microprocessor. (8)
- (ii) List any four addressing modes of 8086 microprocessor and give two examples for each addressing mode. (8)

Or

- (b) (i) Give two examples for bit manipulation instructions, program execution transfer instructions, process control instructions and data transfer instructions. (8)
- (ii) What is an assembler directive? What does ASSUME, EQU, EVEN and DB assembler directives do? (8)
13. (a) (i) Draw and explain 8086 interrupt-pointer table. (8)
- (ii) With a neat block diagram explain the simple 8086 based microcomputer. (8)

Or

- (b) (i) Write an 8086 assembly language program which reads the temperature and lights one of three lamps according to temperature read. If the temp < 30°C, yellow lamp will be turned on. If the temp > = 30°C and < 40°C, green lamp will be turned on, temp > = 40°C will turn on red lamp. (8)
- (ii) Explain the 8086 bus activities during a read machine cycle. (8)

14. (a) (i) Compare the characteristics of memory mapped I/O with peripheral I/O. (8)
- (ii) Explain the operating modes of 8253 timer. (8)

Or

- (b) (i) Draw the functional block diagram of 8257 DMA controller and explain. (8)
- (ii) Draw the mode word format and command word format of 8251 USART. (8)
15. (a) (i) Explain the Data memory structure of 8051 microcontroller. (8)
- (ii) How many parallel ports are there in 8051 microcontroller? Explain the functions of each port in detail. (8)

Or

- (b) (i) How do you use the hardware interrupts and software interrupts in 8051 microcontroller? (8)
- (ii) Explain the timer modes of 8051 microcontroller. (8)

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