

Faculty of Engineering and Technology
Fifth Semester B.E. (Electrical Engg.)
(C.B.S.) Examination

MICROPROCESSOR AND INTERFACING

Time : Three Hours] [Maximum Marks : 80

INSTRUCTIONS TO CANDIDATES

- (1) All questions carry marks as indicated.
 - (2) Due credit will be given to neatness and adequate dimensions.
 - (3) Assume suitable data wherever necessary.
 - (4) Illustrate your answers wherever necessary with the help of neat sketches.
1. (a) Explain the general organization of a Computer containing MPU, Memory and Input Output Devices. 5
 - (b) Explain the following terms :
Bit, Byte, Word, Double Word, Nibble. 3
 - (c) Explain the advantage of multiplexed address data bus. Explain the role of Latch in demultiplexing. 6

OR

2. (a) Explain what do you mean by absolute and linear decoding ? What are its advantages and disadvantages ? 6

- (c) Interface 4×4 matrix keyboard with 8085 and write a program to find the number of a pressed key. 7

OR

12. Write short notes on (any **three**) : 14
- (i) Slow memory interfacing
 - (ii) Multiplexed interfacing of 7-segments
 - (iii) Interfacing of LED and Switches with 8085
 - (iv) Microcomputer system related products.

- (b) Draw a memory map to interface the following memory devices in the system :
- (i) 2 K × 8 EPROM using 1 K × 8 EPROM chips
- (ii) 2 K × 8 RAM using 1 K × 8 RAM chips.
- The EPROM should start from the location 0000H and RAM at 1800 H. 8

3. (a) Explain in detail the internal architecture of 8085 microprocessor. 8
- (b) Explain various addressing modes in 8085 with examples. 5

OR

4. (a) Explain the meaning of following instruction by giving status of flag, addressing modes, type of instruction and T-states :
- (1) SPHL
- (2) STAX rp
- (3) DAA. 6
- (b) Explain different assembler directives used in 8085 programming. 7
5. (a) Explain SP register and stack memory related instructions of 8085 microprocessor. 7
- (b) Write a program to count no. of 1's in a byte store in memory at 4000 H. 6

OR

6. (a) Explain PSW in detail. Give its format. Explain the function of flags of 8085. 7
- (b) Explain in detail the operation of CALL and RET instruction. 6

7. (a) Explain the interrupt structure in 8085. 7
- (b) Differentiate between software and hardware interrupt in detail. 6

OR

8. (a) Explain SIM and RIM instructions in detail. 6
- (b) Write a program to generate a square wave with a period of 200 μsec using SOD pin of microprocessor having 3 MHz frequency. 7
9. (a) Draw the timing diagram showing all the necessary signals when microprocessor executes OUT FSH. 6
- (b) Differentiate between memory mapped I/O and I/O mapped I/O. 7

OR

10. (a) Draw and explain block diagram of 8255 PPI. 6
- (b) Show the interface of 8255 with 8085 and write a program to read the key closed and display its code on 7-segment display connected to port B. 7
11. (a) What do you mean by Bus contention ? How can it be removed ? 3
- (b) Explain the relation between Ready signal and Wait state. 4