B.E. (Electrical Engineering (Electronics & Power)) Fifth Semester (C.B.S.)

Microprocessor & Interfacing

P. Pages : 2 **NRT/KS/19/3421**

Time : Three Hours *0131* Max. Marks : 80

Notes :
1. All questions carry marks as indicated.
2. Solve Question 1 OR Questions No. 2.
3. Solve Question 3 OR Questions No. 4.
4. Solve Question 5 OR Questions No. 6.
5. Solve Question 7 OR Questions No. 8.
6. Solve Question 9 OR Questions No. 10.
7. Solve Question 11 OR Questions No. 12.
8. Due credit will be given to neatness and adequate dimensions.
9. Assume suitable data whenever necessary.
10. Illustrate your answers whenever necessary with the help of neat sketches.

1. a) Explain the concept of VLSI with the help of technologies. **6**

b) Explain different decoding techniques used with one example each. **7**

OR

2. a) Explain organization of computer with MPU. **7**

b) Define the following terms. **6**
i) Bit, Byte, Word and double word.
ii) Types of Buses
iii) MSI

3. a) Explain addressing modes supported by 8085 with one example each. **7**

b) Draw and explain timing diagram of LDA 5000H. **6**

OR

4. a) Draw and explain internal architecture of 8085 in detail. **7**

b) Explain how use can generate the control signals **6**
$\overline{MEMRD}$, $\overline{MEMWR}$, $\overline{IOR}$, $\overline{IOW}$ from $\overline{RD}$, $\overline{WR}$ and IO $\overline{M}$.

5. a) How microprocessor respond to CALL instruction. Also explain all conditional and unconditional CALL instructions of 8085. **7**

b) Write a program using 8085 instructions to count the number of zeros and number of 1's in a byte stored in a memory address 5000H. Store the result in next consecutive memory location. **7**

OR

6. a) Explain Stack structure of 8085. Also explain the instructions related with Stuck. **7**

b) Write a program to find largest number from a block of 10 data bytes present in memory location 5000H onwards and store the result at location 6000H. **7**

7. a) Draw and explain interrupt structure of 8085. **6**

b) Draw and explain the structure of RIM and SIM instructions. **7**

OR

8. a) Give the classification of interrupts. **6**

b) Write a program to generate square wave of frequency 2 kHz on SOD pin of 8085. Assume clock frequency of 8085 is 3MHz. **7**

9. a) Draw and explain internal block diagram of 8253 (PIT). **6**

b) Interface 8255 with 8085 at address 5000H. Also initialize 8255 to make port A as input and port B and C as output port. **7**

OR

10. a) Draw and explain internal block diagram of 8255 (PPI). **6**

b) Interface 8253 with 8085 microprocessor and write a program to generate square waveform of frequency 1KHz at counter 0. **7**

11. a) Write short note on: **8**
i) Bus contention.
ii) Assembler directives.

b) Draw and explain interfacing of 4X4 matrix keyboard and one seven segment display with IC 8085. **6**

OR

12. a) Explain slow memory interfacing with 8085 giving complete signal descriptions. **8**

b) Write short note on: **6**
General awareness about microcomputer system related product.

****