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

Microprocessor & Interfacing

P. Pages : 2 **KNT/KW/16/7336**

Time : Three Hours * 0 6 5 3 * 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. Assume suitable data whenever necessary.
9. Use of non programmable calculator is permitted.

1. a) Explain the bus concept in microprocessor with neat diagram. **5**

b) Explain the term SSI, MSI, LSI and VLSI. **5**

c) Explain the difference between microprocessor & microcomputer. **4**

OR

2. a) Explain linear and absolute decoding in detail. **6**

b) Define the term Bit, Byte, nibble, word. **4**

c) How many address lines required to access memory of **4**

i) 256 byte

ii) 8 KB

iii) 32 KB

iv) 2 MB

3. a) Draw and explain the internal architecture of 8085 microprocessor. **7**

b) Explain the following pins of 8085. **6**

i) ALE

ii) IO/$\overline{M}$

iii) Ready

OR

4. a) Draw the digital circuit to generate $\overline{MEMRD}$, $\overline{MEMWR}$, $\overline{IOR}$ & $\overline{IOW}$ from $\overline{RD}$, $\overline{WR}$ & IO/$\overline{M}$. **6**

b) Explain the different addressing modes for 8085 microprocessor with example. **7**

5. a) Explain the stack memory. Also explain the use of PUSH and POP instructions. **6**

b) Write a assembly program for 8085 to find the largest number from the array of 10 numbers stored in memory from address 6000H. **7**

OR

6. a) Draw and explain the flag register of 8085. **6**

b) Draw and explain the timing diagram of JMP 5200 H. **7**

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

b) Explain the instruction of 8085 SIM and RIM. **7**

OR

8. a) Write a program to generate square wave of frequency 2 KHz on SOD pin of IC 8085. Assume clock frequency of 8085 = 5 MHz. **7**

b) Explain the RST n and CALL instruction of 8085. **7**

9. a) Differentiate between IO mapped I/O and memory mapped I/O. **6**

b) Draw and explain the block diagram of 8255 PPI. **7**

OR

10. a) Draw and explain the CWR format for I/O mode and BSR mode at 8255 PPI. **7**

b) Draw and explain the interfacing of 8253 with 8085. **6**

11. a) Write short note on **any two.**

a) Bus Contention. **3**

b) Assembler directives **3**

c) Serial & parallel data transfer. **3**

b) Draw and explain the interfacing of 4 x 4 matrix keyboard and one seven segment display with IC 8085. **7**

OR

12. Interface the following memory chips to 8085. **13**

1) $4K \times 8$ EPROM ------- 1 No.

2) $4K \times 8$ SRAM ------- 1 No.

Using $2K \times 8$ chips.

Assume starting address for EPROM is 0000H and SRAM is 9000H. Also explain the interfacing.

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