Sem VI (old) Electronics Microprocessors & Microcontrollers - II

29/11/16

Q. P. Code : 590403

(3 Hours) [Total Marks: 100]

Note: 1. Question No. 1 is compulsory.
2. Solve any four from the remaining questions.
3. All questions carry equal marks.

1. a. Explain the architecture of the 8086 microprocessor with a neat diagram. Highlight the function of each block. (10)
   b. Explain the addressing modes of the PIC 18 microcontroller with neat examples. (10)

2. a. Explain the minimum and maximum mode operation of the 8086 microprocessor. (10)
   b. Interface the 8086 microprocessor to the 8255 programmable peripheral interface (PPI) and explain the various interfacing signals. (10)

3. a. Explain with a neat diagram the 8086 -8087 math coprocessor interface. Highlight the function of the Request/Grant pins. (10)
   b. Explain the memory organization of the PIC 18. (10)

4. a. Write a program to perform multiplication of two numbers using rotate instructions of the PIC 18. (10)
   b. Write a detailed note on assembler directives of the 8086 highlighting the function of each. (10)

5. a. Write a program to transfer a block of data from one memory location to another using the string instructions of the 8086. (10)
   b. Compare the salient features of 8086, 80386 and the Pentium. (10)

6. a. Explain the advantages of Segmentation w.r.t. the 8086 processor. (10)
   b. Interface 4KB of ROM and 4KB of RAM to the 8086. Show the address decoding and memory map. (10)

7. Write short notes on (**Any two**): (20)
   a. 8288 Bus controller
   b. Parallel ports of the PIC 18
   c.8257 DMA controller

SEM-VI (OLD) ETRX 27/12/16.

Communication System & Application

Q.P. Code : 590800

(3 Hours) **[Total Marks : 100**

N.B. : (1) Question **1** is **compulsory**.
(2) Answer any **4** out of the remaining questions.
(3) **Diagrams** to be **drawn** wherever **required**.

1. Answer any **two**. **20**
   (a) Explain with block diagram working of TV transmitter.
   (b) Explain the principle of working of CW radar.
   (c) State and prove kepler's laws.

2. (a) Derive expression for maximum radar range and discuss factors affecting it. **10**
   (b) Explain the principle of working of a PAL receiver. **10**

3. (a) Describe the various stages of uplink and downlink model of a satellite system. **10**
   (b) Explain composite video signal with neat diagram. **10**

4. (a) Explain the working of yagi uda antenna along with radiation pattern. **10**
   (b) Explain any one camera tube used in TV system. **10**

5. (a) Explain broadside array and end fire array. Draw radiation pattern. **10**
   (b) Describe LEO, MEO and GEO satellites. **10**

6. (a) Define the following. **10**
   Apogee, Perigee, Radiation pattern, Beam width of antenna, Radiation resistance.
   (b) Explain interlaced scanning. **10**

7. Write short notes on : **20**
   (a) HDTV
   (b) Satellite Launch mechanism
   (c) Radar scanning
   (d) parabolic reflector antenna