

Microprocessors & Microcontrollers - I TE (old)
ETRX

Sem V

16-05-2016

Q.P. Code : 590402

(3 Hours)

[Total Marks : 100

- N.B. :** (1) Question No. **one** is compulsory.
(2) Attempt any **four** from remaining **six** questions.
(3) Assume suitable data if require.

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|--------|---|----|
| 1. (a) | Explain architectural features of 8086 | 5 |
| b) | Explain architectural features of PIC18 | 5 |
| c) | What is advantage of memory segmentation? How? | 5 |
| d) | Explain Polling and interrupt driven I/O | 5 |
| 2. (a) | Explain addressing modes of 8086 microprocessor | 10 |
| b) | Explain types of instructions of PIC 18 with example of each type | 10 |
| 3. a) | Explain memory read or write cycles of PIC18 | 10 |
| b) | Explain I/O mapped and memory mapped I/O | 10 |
| 4. (a) | Write an assembly language program for Exchanging elements of arrays of 4 elements each | 10 |
| (b) | Write an assembly program to read and write I/O ports | 10 |
| 5. (a) | Explain stack operation and it's any application example | 10 |
| (b) | Explain Serial data I/O operation using PIC 18 | 10 |
| 6. | Design a PIC18 based system with 3KB of program memory, 15 KB of data memory, two 4 bit I/O ports | 20 |
| 7. | Write short notes on any two | 20 |
| (a) | Call and Jump operation and its usages | |
| (b) | Interrupt structure of PIC 18/8086 and handling | |
| (c) | Registers of PIC 18 and their usages, limitations | |

Q.P. Code : 590802

(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 principle of camera tube used in TV system.
 - (b) Describe LEO, MEO and GEO satellites.
 - (c) Derive expression for maximum radar range and discuss factors affecting it.
2. (a) State and prove kepler's laws. 10
(b) Explain the principle of working of a TV receiver. 10
3. (a) Describe the various stages of uplink and downlink model of a satellite system. 10
(b) Explain principle of working of MTI radar. 10
4. (a) Explain the construction and working of parabolic reflector antenna along with radiation pattern. 10
(b) Explain colour burst and frequency interleaving in colour TV systems. 10
5. (a) Explain broadside array and end fire array. Draw radiation pattern. 10
(b) Explain need for pre and post equalizing pulses in TV system. 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) CW radar
 - (d) Blind speed in radar