

T. E (ETRX) 21

18/5/13

MP & MC II

ws-Con-2013-46

Con. 9055-13.

GS-9918

(3 Hours)

[Total Marks : 100

- N.B. :** (1) Question No. 1 is **compulsory**.
(2) Attempt any **four** questions from remaining **six** questions.

- 1a) Explain instruction format of 8086 microprocessor.
- b) Write function of the following 8086 microprocessor pins
i) LOCK (bar) ii) QS0 & QS1 (bar)
- c) Draw timing diagram for minimum mode 8086 read bus cycle.
- d) Explain the application of timer in PIC18F microcontroller. 20 marks

Q. 2 a) Explain in detail software and hardware architecture of 8086 10 marks

b) Write a program in ALP of 8086 to compute the factorial of a number. 10 marks

Q. 3 a) Design the 8086 microcomputer system with the following specifications ;

i) 8086 CPU operating at 5MHz

ii) 8087 co-processor for numeric computation

iii) 32 KB of EPROM using 8 KB devices

iv) 64 KB of SRAM using 16k devices

v) 2 input and 1 output port all are of 16 bits. 15 marks

b) Explain address modes of 8086 microprocessor. 5 marks

Q. 4 a) Draw and explain functional block diagram of 8257. Explain the bit configuration of mode set register and status register of 8257. 10 marks

b) How the data memory and program memory is organized with PIC18F. Explain with the help of memory map. 10 marks

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Q. 5 a) Convert the decimal number -187.625 into short real, long real and temporary real data of 8087 NDP. 5 marks

b) Explain different 8087 exceptions. 5 marks

c) How the DMA operation is taken place with 8257. Explain the operation with the help of timing diagram and state diagrams. 10 marks

Q. 6 a) Explain the interfacing diagram of 8259 in maximum mode and cascaded mode.

10 marks

b) Write a program for PIC 18F to find the largest number stored in the array that is stored in data memory locations from 0x10 to 0x5F 10 marks

Q. 7 Write short notes ;

a) Assembler directives for 8086 7marks

b) Handshaking mode of 8255 PPI 7 marks

c) Configuration of 8259 OCWS 6 marks
