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S.E. (Computer Engineering) (II Sem.) EXAMINATION, 2014

MICROPROCESSORS AND INTERFACING TECHNIQUES

(2012 PATTERN)

Time : Two Hours

Maximum Marks : 50

N.B. :— (i) Answer total 4 questions 1 or 2, 3 or 4, 5 or 6,
7 or 8.

(ii) Neat diagrams must be drawn wherever necessary.

(iii) Figures to the right indicate full marks.

1. (a) Explain how logical to Linear address translation with
TI = 0 is done in 80386DX for protected mode ? Draw neat
diagram. [8]

(b) What are three components of COMMAND.COM ? Explain
significance of each of them. [4]

Or

2. (a) Compare 8086, 80386 and i7 processor on the basis of
architectural features. (Min. 6 points of comparison) [4]

P.T.O.

- (b) Compare and contrast .COM and .EXE programs. [4]
- (c) Draw architecture of 8259 PIC and state function of each block. [4]
- 3.** (a) What is the need of sample and hold circuit ? Explain successive approximation ADC with block diagram. [4]
- (b) Find out mode word and command word for the following configuration.
Mode Word — Baud rate 16x, 8 bit char length, no parity, with 2 stop bits. Control word — Transmit and receive enable, DTR — Ready, normal operation, Reset all error flags, no internal reset, Hunt mode disable. [4]
- (c) Why DMA controlled data transfers are preferred over interrupt driven or program controlled ? Explain the use of HRQ and EOP signals. [4]

Or

- 4.** (a) What is the sensor matrix mode of the IC 8279 ? Explain the function of the 8×8 -bit RAM in this mode. [4]

- (b) Explain the BSR and I/O mode word formats of the IC 8255. [4]
- (c) Explain operation of 8253/54 in mode 3 with the help of timing diagram. [4]
- 5.** (a) Draw the schematic of 8086 microprocessor operating in minimum mode, showing supporting chips required like clock generator, latches, buffers etc. Explain working of 8086 in minimum mode. [8]
- (b) How does 8086 distinguish 8087 instructions from its own instructions ? [2]
- (c) Explain the 8087 instructions with one example each :
- (i) Data Transfer group
 - (ii) Constant returning group
 - (iii) Coprocessor control group. [3]

Or

- 6.** (a) Draw and discuss the interface and interaction between 8086 and 8087. [7]
- (b) Draw and explain the read cycle timing diagram of 8086 in minimum mode. [6]

7. (a) List and explain the features of Intel X58 chipset. [7]
- (b) Discuss the following signals of Power Management interface of 82801JIR ICH :
- (i) PLTRST#
 - (ii) THRM#
 - (iii) THRMTRIP#
 - (iv) PWROK [6]

Or

8. (a) Draw and explain block diagram of i5 motherboard. [7]
- (b) Explain RAS and 'Intel QuickData Technology' features of Intel x58 express chipset. [6]