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**[4657]-587**

**S.E. (Information Technology) (Second Semester)**

**EXAMINATION, 2014**

**PROCESSOR ARCHITECTURE AND INTERFACING**

**(2012 PATTERN)**

**Time : Two Hours**

**Maximum Marks : 50**

**N.B. :—** (i) Answer Q. Nos. 1 or 2, Q. Nos. 3 or 4, Q. Nos. 5 or 6, Q. Nos. 7 or 8.

(ii) Neat diagrams must be drawn wherever necessary.

(iii) Figures to the right indicate full marks.

(iv) Assume suitable data if necessary.

1. (a) State instruction example for the following addressing modes of 80386 showing physical address generation : [6]
- (i) Direct
- (ii) Based indexed
- (iii) Scale indexed with displacement.
- (b) Draw the general segment descriptor format. Explain how G (granularity) bit affects the LIMIT field. [6]

*Or*

2. (a) Compare and contrast : [6]
- (i) .COM and .EXE
- (ii) NEAR procedure and FAR procedure.
- (b) Explain with suitable control signals, the timing diagram of a non-pipelined write cycle of the 80386 processor. [6]

P.T.O.

3. (a) Draw and explain Programmer's model of 80386 in protected mode operation. [6]
- (b) What is privileged instruction ? Explain *two* examples of it. [6]

*Or*

4. (a) State and explain the difference between all operating modes of 80386. [6]
- (b) Explain IDT of 80386 in detail with diagram and format. [6]
5. (a) Draw and explain architecture of 8051 Microcontroller. [7]
- (b) Explain any *three* addressing modes in 8051 microcontroller with example. [6]

*Or*

6. (a) Explain the following instructions in 8051 : [6]
- (i) ORL A, #36
- (ii) MUL AB
- (iii) SWAP A.
- (b) Explain program status word (PSW) in 8051 microcontroller. [7]

7. (a) State and explain SFR's required for serial communication in 8051 microcontroller. [7]
- (b) Draw and explain TCON and TMOD SFR's of 8051 microcontroller. [6]

*Or*

8. (a) List and explain an *two* operating modes of Timer of 8051. [7]
- (b) Explain different types of interrupt in 8051. [6]