

May - June - 2011

Total No. of Questions—12]

[Total No. of Printed Pages—4

[3962]-214

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

EXAMINATION, 2011

PROCESSOR ARCHITECTURE AND INTERFACING

(2008 PATTERN)

Time : Three Hours

Maximum Marks : 100

N.B. :— (i) Answer any *three* questions from each Section.

(ii) Answers to the two Sections should be written in separate answer-books.

(iii) Neat diagrams must be drawn wherever necessary.

(iv) Figures to the right indicate full marks.

(v) Assume suitable data, if necessary.

SECTION I

1. (a) Draw Functional Diagram of 80386 in detail and explain. [10]

(b) Give significance of the following bits : [8]

(i) ET

(ii) MP

(iii) EM

(iv) VM

P.T.O.

Or

2. Draw Timing diagram of Non-pipelined. Write Cycle followed by Pipelined Read Cycle and explain. [18]

3. (a) How are .ASM, .OBJ, .EXE and .MAP files generated ? Give its significance. [8]

- (b) Explain the various operating modes of 8255. [8]

Or

4. (a) Draw Interfacing diagram of 8086 with 8255. Define Control word Register if Port A and Port B is used to interface Keyboard and Port C for Display in Mode 0. [10]

- (b) Differentiate between FAR and Near Procedure. [6]

5. (a) What is the significance of Segment Register, Global Descriptor Table and Global Descriptor Table register in Conversion of Linear address to physical address of Protected Mode of 80386. Explain in detail with format of each. [12]

- (b) Differentiate between Segment level protection and Page level protection. [4]

Or

6. (a) Which are the different registers used for Paging ?
Explain. [8]
- (b) Explain the concept of Virtual Memory. What is its maximum size and how ? [8]

SECTION II

7. 80386 is currently executing program from code segment having PL as 2. If it needs to access the code from PL0, is it possible ? If yes, which are the methods used for the same ? If no, justify your answer. [18]

Or

8. (a) Write a short note on IDT. [10]
- (b) Which are the different types of Exceptions in 80386 ? [8]
9. (a) Explain Internal data Memory organization of 8051 Microcontroller. [8]
- (b) Give significance of all ports of 8051. [8]

Or

10. (a) Explain different types of Interrupt in 8051. How is the priority assigned to them ? [10]

- (b) What is the difference between RETI and RET ? [2]
- (c) Write instructions for selecting bank 1 of 8051 Microcontroller. [4]
11. (a) Write ALP to generate square wave of 2 kHz using Timer 0 of 8051 with crystal frequency as 12 MHz. [8]
- (b) Give features of PIC 16F8XX. [8]

Or

12. (a) Explain any 2 operating modes of Timer of 8051. [8]
- (b) Explain any 2 operating modes of serial communication of 8051. [8]