

Total No. of Questions—12]

[Total No. of Printed Pages—4

Seat No.	
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[4657]-85

S.E. (Information Technology) (Second Semester) EXAMINATION, 2014

PROCESSOR ARCHITECTURE AND INTERFACING

(2008 PATTERN)

Time : Three Hours

Maximum Marks : 100

- N.B. :—** (i) Answer Q. No. 1 or Q. No. 2, Q. No. 3 or Q. No. 4, Q. No. 5 or Q. No. 6 from Section I and Q. No. 7 or Q. No. 8, Q. No. 9 or Q. No. 10, Q. No. 11 or Q. No. 12 from Section II.
- (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 and explain functional block diagram of 80386 in detail. [10]
- (b) Differentiate between Memory mapped I/O and I/O mapped I/O. [8]

P.T.O.

Or

- 2.** (a) Explain different Control Registers of 80386 Microprocessor in detail. [10]
- (b) Explain Memory Segmentation of 80386 Microprocessor in real mode. [8]
- 3.** (a) Compare and contrast : [8]
- (i) .COM & .EXE programs
- (ii) DOS & BIOS interrupts or calls.
- (b) Explain the significance of the following assembler directives : [8]
- (i) EXTRN
- (ii) DD
- (iii) PROC
- (iv) .MODEL SMALL.

Or

- 4.** (a) Draw block diagram of 8255 and explain. [8]
- (b) Compare and contrast : [8]
- (i) Procedure and Macro
- (ii) FAR and NEAR Procedure.

5. (a) Explain page translation process with diagram and draw PTE and PDE formats. [8]

(b) Write down the steps to switch from RM to PM. [8]

Or

6. (a) What is Descriptor Table ? Write the significance of the following registers ? Explain with diagram : [10]

(i) GDTR

(ii) IDTR

(iii) LTDR.

(b) Write a short note on Virtual Memory of 80386 Microprocessor. [6]

SECTION II

7. (a) What is multitasking ? Draw and explain Task register, Task state segment, TSS descriptor. [10]

(b) What is the significance of control register ? Draw and explain in detail. [8]

Or

8. Write short notes on : [18]

(1) IDT in 80386

(2) I/O Permission Bit Map

(3) Privileged levels in 80386.

- 9.** (a) Draw and explain architectural block diagram of 8051 microcontroller. [10]
- (b) Explain the following with example : [6]
- (1) AJMP address
 - (2) MOVC A, @ A + PC
 - (3) RET and RETI.

Or

- 10.** (a) Draw and explain internal memory organization of 8051 microcontroller. [8]
- (b) Explain interrupt structure of 8051 microcontroller with priority structure. [8]
- 11.** (a) Explain various modes of timer of 8051 microcontroller. [12]
- (b) Describe the features of PIC16F8CC microcontroller. [4]

Or

- 12.** (a) Explain in detail serial communication of 8051 microcontroller with the help of SCON. [10]
- (b) Write 8051 program to generate square wave of 2kHz frequency using timer 1. [6]