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**[5252]-577**

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

**EXAMINATION, 2017**

**PROCESSOR ARCHITECTURE AND INTERFACING**

**(2015 PATTERN)**

**Time : Two Hours**

**Maximum Marks : 50**

**N.B. :—** (i) Neat diagrams must be drawn wherever necessary.

(ii) Figures to the right indicate full marks.

(iii) Assume suitable data, if necessary.

1. (a) Explain how to convert .asm to .exe. Explain the necessary tools required for the same. [7]
- (b) What is Privileged Instruction ? Explain *two* examples of privileged instructions. What is the Privilege Level when 80386 is operating in Real Mode and Protected Mode. [5]

*Or*

2. (a) How linear address is converted into the Physical Address ? When 80386 is operating in Protected Mode ? Explain. [7]
- (b) Explain difference between Macro and Procedure with examples. [5]

P.T.O.

3. (a) Explain Internal Memory Structure of 8051. [5]  
(b) What do you mean by IDT of 80386 ? Which are different types of descriptors present in IDT ? Give difference in handling Interrupts using different types of descriptors present in IDT. [7]

*Or*

4. (a) List features of 8051 Microcontroller. Compare Microcontroller with Microprocessor. [5]  
(b) Explain significance of Backlink field in 80386. Explain multitasking in 80386 with diagram. [7]

5. (a) Explain significance of various ports [ $P_0$  to  $P_3$ ] in 8051. [7]  
(b) Explain significance of PSW and TCON with format. [6]

*Or*

6. (a) Explain Interrupt structure of 8051 with diagram. [7]  
(b) Explain any *two* Operating Modes of Timer in 8051. [6]
7. (a) How to configure Port 0 of Port 1 for 2 digit seven segment display ? Explain with diagram and instruction. [7]  
(b) Draw interfacing diagram of ADC with 8051. Explain [6]

*Or*

8. (a) Draw interfacing diagram of 8051 with external data memory as  $4K \times 8$  and external program memory as  $2K \times 8$ . [7]  
(b) Draw and explain functional block diagram of 8255. [6]