Total No. of Questions : 8]

SEAT No. :

PA-1240

[Total No. of Pages : 2

[5925]-263

S.E. (Computer)

MICROPROCESSOR

(2019 Pattern) (Semester - IV) (210254)

Time : 2½ Hours]   *[Max. Marks : 70*

Instructions to the candidates:

1) *Solve Q.1 or Q.2, Q.3 or Q.4, Q.5 or Q.6, Q.7 or Q.8.*
2) *Neat diagrams should be drawn wherever necessary.*
3) *Use of Non-programmable Calculator is allowed.*
4) *Assume suitable data if necessary.*

Q1) a) Explain the Segment Translation Process with a neat diagram of 80386. **[6]**

b) Differentiate and explain GDTR, LDTR, and IDTR. **[6]**

c) Demonstrate General Selector Format in brief. **[6]**

OR

Q2) a) Demonstrate General Descriptor Format available in various descriptor tables. **[6]**

b) With the necessary diagram, explain the page translation process in 80386. **[6]**

c) Explain the use of following instructions in detail: **[6]**

     i) LGDT

     ii) SIDT

     iii) LLDT

Q3) a) What is call gate? Explain how it is used in calling functions with higher privilege levels. **[6]**

b) Explore five aspects of protection applied in segmentation. **[6]**

c) Explore the need for a protection mechanism in 80386. **[5]**

OR

P.T.O.

Q4) a) Explain the following terminologies. **[6]**

    i) CPL

    ii) DPL

    iii) RPL

    b) Explain different levels of protection. Describe the rules of protection check? **[6]**

    c) Elaborate on the concept of combining segment protection and page level protection in 80386. **[5]**

Q5) a) Explore memory management in the Virtual 8086 Mode. **[6]**

    b) Explain the TSS descriptor of 80386 with a neat diagram. **[6]**

    c) Explore the role of Task Register in multitasking and the instructions used to modify and read Task Register. **[6]**

OR

Q6) a) Draw and explain the Task State Segment of 80386. **[6]**

    b) With the necessary diagram, explain entering and leaving the virtual mode of 80386. **[6]**

    c) Difference between Real Mode and Virtual 8086 Mode. **[6]**

Q7) a) Explain the following exception conditions with an example: Faults, Traps, and Aborts. **[6]**

    b) With the help of the necessary diagram, explain the structure of IDT in 80386. **[6]**

    c) List and elaborate on different applications of microcontrollers. **[5]**

OR

Q8) a) Differentiate and explain the Interrupt gate and Trap gate descriptor. **[6]**

    b) How interrupts are handled in protection mode. Explain with the help of a neat diagram. **[6]**

    c) Differentiate between Microprocessor and Microcontroller. **[5]**

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