

Total No. of Questions : 8]

SEAT No. :

**P9113**

[Total No. of Pages : 2

[6179]-238

**S.E. (Computer)**

**MICROPROCESSOR**

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

*Time : 2½ Hours]*

*[Max. Marks : 70*

*Instructions to the candidates:*

- 1) Answer Q1 or Q2, Q3 or Q4, Q5 or Q6, Q7 or Q8.
- 2) Neat diagrams must be drawn wherever necessary.
- 3) Figures to the right indicate full marks.

**Q1)** a) With the help of necessary diagram, explain the complete address translation process in 80386. [6]

b) Enlist various types of system and non system descriptors in the 80386. Explain their use in brief. [6]

c) Write a short note on GDTR, IDTR, LDTR. [6]

OR

**Q2)** a) Explain the page translation process in 80386. [6]

b) Explain the use of following instructions in detail. [6]

i) LGDT

ii) LIDT

iii) SIDT

c) Draw and explain the general descriptor format available in various descriptor tables. [6]

**Q3)** a) Explain various aspects of protection mechanism of segmentation unit. [6]

b) Write a short note on EPL, DPL, and IOPL. [6]

c) With the help of neat diagram explain various levels of protection and rules for protection check. [5]

OR

*P.T.O.*

- Q4)** a) Explain how control transfer instructions are executed using the call gate in the system? [6]  
b) Elaborate on the concept of combining segment protection and page level protection in 80386. [6]  
c) List and explain various privilege instructions. [5]

- Q5)** a) Explain the TSS descriptor and its role in multitasking. [6]  
b) Explain the structure of V86 task in detail. How is protection provided within the V86 task? [6]  
c) Differentiate between real mode and virtual mode. [6]

OR

- Q6)** a) Define task switching and explain the steps involved in task switching operation. [6]  
b) List and explain various features of virtual 8086 mode. [6]  
c) Draw and explain task state segment of 80386. [6]

- Q7)** a) With the help of neat diagram explain the process of handling interrupts in protected mode. [6]  
b) Explain different types of exceptions in 80386 with suitable examples. [6]  
c) With the help of neat diagram explain the architecture of typical microcontroller. [5]

OR

- Q8)** a) Explore various descriptors present in IDT of 80386. [6]  
b) Explain the following exceptions in brief. [6]  
i) Divide error  
ii) Invalid opcode  
iii) Overflow  
c) Explain various features of the 8051 microcontroller. [5]

