Total No. of Questions – [3]

Total No. of Printed Pages: 02

G.R. No.	

Paper Code - U239-125(T1)

OCTOBER 2019 / INSEM (T1)
S. Y. B.TECH. (COMPUTER ENGINEERING) (SEMESTER – III)
COURSE NAME: COMPUTER ARCHITECTURE AND ORGANIZATION
COURSE CODE: CSUA21185

SOLUTION
(PATTERN 2018)

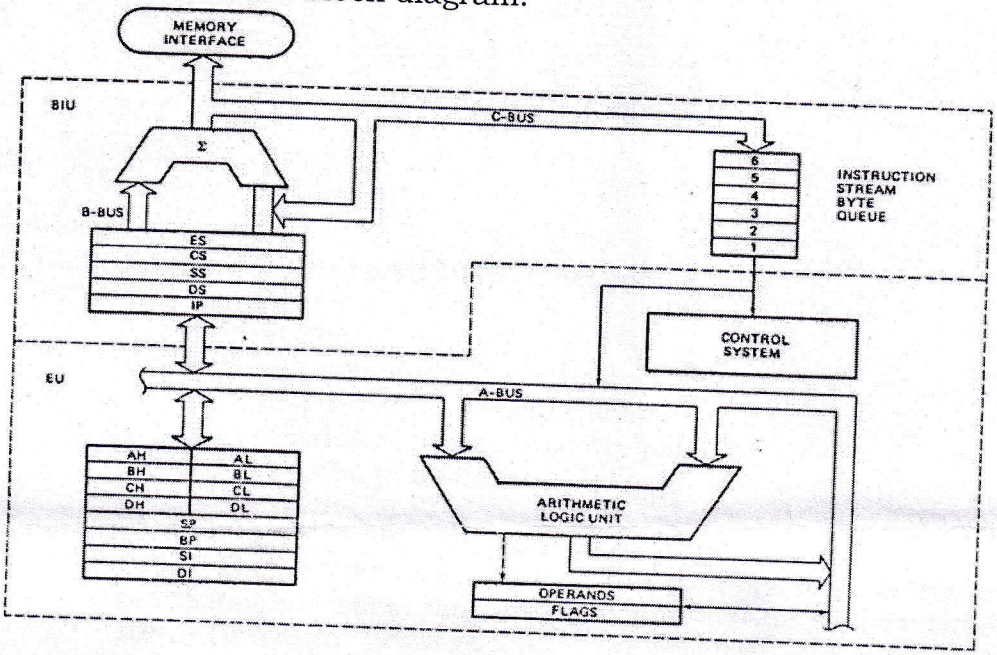
Time: [1 Hour]

[Max. Marks: 20]

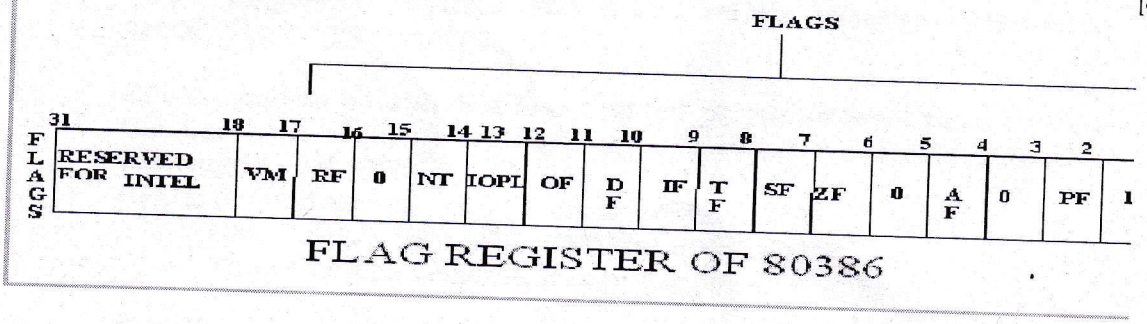
Instructions to candidates:
1) All questions are compulsory.
2) Figures to the right indicate full marks.
3) Use of scientific calculator is allowed.
4) Assume suitable data wherever required.

Q 1) Attempt any **one**

a) 8086 architecture block diagram. [8]



b) 80386 Flag registers. [8]



FLAG REGISTER OF 80386

Q 2) Attempt any **one**

a) Describe Segment Translation with diagram. [8]

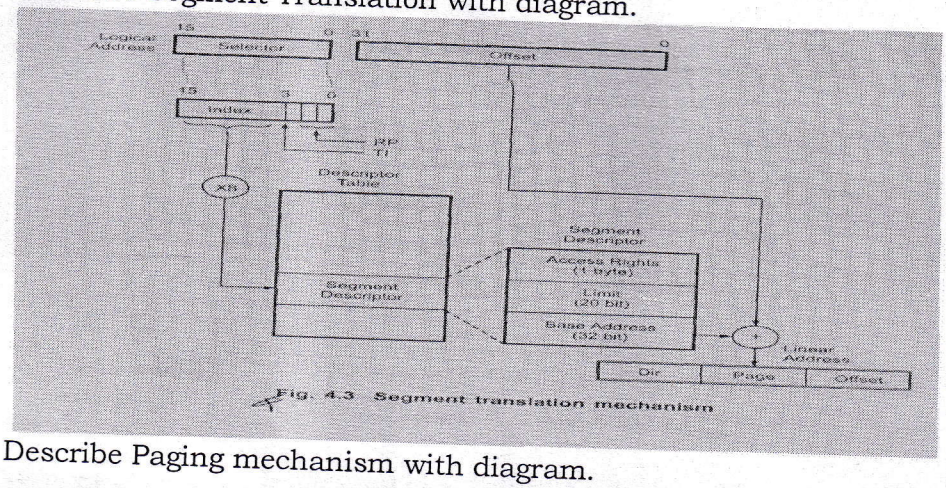
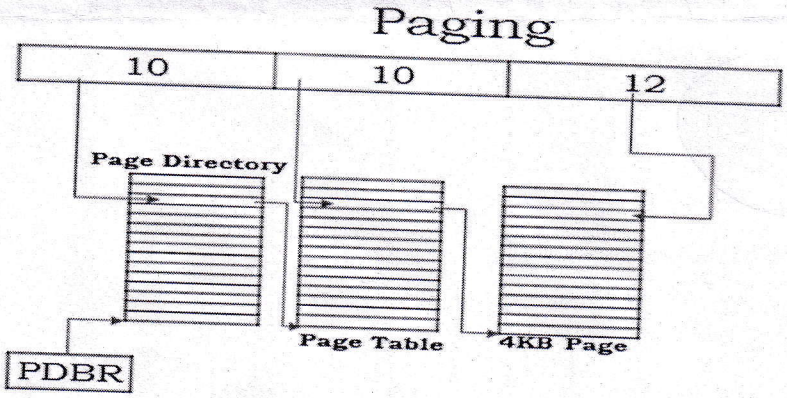


Fig. 4.3 Segment translation mechanism

b) Describe Paging mechanism with diagram. [8]



Q 3) Attempt any **one**

a) Determine any two Segment Level Protection aspects. [4]

- Has five aspects
  - Type Checking
  - Limit Checking
  - Restriction of addressable domain
  - Restriction of procedure entry point
  - Restriction of Instruction Set.

b) Discuss the term CPL, DPL, RPL, and EPL. [4]

- **CPL** – Current Privilege Level is the privilege level of the currently executing program or task. It is stored in CS and SS segment registers
- **DPL** - Descriptor privilege level is the privilege level of a segment: It is stored in the DPL field of the segment descriptor
- **RPL** - Requested privilege level is an override privilege level use to specify the target segment.

- RPL is used **to establish a less trusted privilege level than CPL** for the use of a segment and this level is called the task's **Effective Privilege Level** (EPL).
- EPL is defined as

  EPL = max { RPL,CPL } (numerically)

  – Thus the task becomes less privileged