

Total No. of Questions – [06]

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G.R. No.

Paper Code U 239-125 (ESE)

DECEMBER 2019 ENDSEM

S. Y. B.TECH. (COMPUTER ENGINEERING) (SEMESTER -III)

COURSE NAME: COMPUTER ARCHITECTURE AND ORGANIZATION

COURSE CODE: CSUA21185

(PATTERN 2018)

Time: [2 Hours]

[Max. Marks: 50]

Instructions to candidates:

- 1) All questions are compulsory.
- 2) Figures to the right indicate full marks.
- 3) Use of scientific calculator is allowed.

Q.1) Attempt any **one**

a) Explain the Programmer's Model of 8086.

[4]

b) Match the pairs

[4]

1. Immediate Addressing	A. ADD AX, [BX+DI+08]
2. Based Indexed with Displacement Mode	B. ADD CX, [BX]
3. Register Indirect	C. ADD AX, [1592H]
4. Direct Addressing Mode	D. ADD AX, 2387H

Q.2) Attempt any **one**

a) Draw and explain segment descriptor.

[4]

b) Explain **GDT** and GDTR.

[4]

Q.3) Attempt any **one**

a) Explain 'Privilege check for control transfer without Gate' with diagram.

[6]

b) What is Virtual mode of 80386? How it switches from Real Mode to Virtual Mode?

[6]

Q.4) Attempt any **one**

a) Draw and explain typical cache organization.

[10]

b) Explain Memory hierarchy with diagram.

[10]

1/2

Q.5) Attempt any **one**

- a) Solve division of the following numbers using restoring division algorithm: [13]
Dividend (A:Q) = 0000:0111 (7)
Divisor (M) = 0011 (3)

- b) Draw flowchart of Booth's Algorithm for two's complement multiplication and explain with example. [13]

Q.6) Attempt any **one**

- a) List and explain control and status registers in detail. [13]

- b) Draw and explain Data Flow Fetch Cycle and Data Flow Indirect Cycle. [13]