Total No. of Questions – [8] Total No. of Printed Pages-[2]

G.R. No.	

U218-123(ESE)

DECEMBER 2018/ENDSEM

S. Y. B. TECH. (COMPUTER) (SEMESTER - I)

COURSE NAME: COMPUTER ORGANIZATION AND MICROPROCESSORS TECHNIQUES

COURSE CODE: CSUA21173

(PATTERN 2017)

Time: [**2 Hours**] [Max. Marks: **50**]

(*) Instructions to candidates:

1) **Answer Q.1, Q.2, Q.3, Q.4, Q.5 OR Q.6, Q.7 OR Q.8**
2) **Figures to the right indicate full marks.**
3) **Use of scientific calculator is allowed**
4) **Use suitable data where ever required**

Q. 1) a) Draw flow chart of Booth's Algorithm for Two's Complement Multiplication. [6]

OR

b) Solve division of the following numbers using restoring division algorithm: [6]

Dividend (A:Q) = 1111:1001 (-7)

Divisor (M)= 1101 (-3)

Q. 2) a) Why I/O module is required? Explain block diagram of I/O Module. [6]

OR

b) Draw and Explain typical cache organization. [6]

Q.3) a) Draw and explain Data Flow Fetch Cycle and Data Flow Indirect Cycle. [6]

OR

b) List and explain control and status registers in detail. [6]

Q.4) a) Draw with neat Diagram and Explain 80386 Flag register. [4]

OR

b) Match the pairs: [4]

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

Q.5) a) Draw neat diagram to convert linear address to physical address using paging. [6]

b) Explain protection in 80386 in detail. [4]

c) Explain GDT and GDTR. [4]

OR

Q.6) a) Draw neat diagram to convert logical address to linear address usin Segmentation. [6]

b) List various types of privileged levels and Explain DPL. [4]

c) Explain LDT and IDT. [4]

Q.7) a) Explain Any 3 String Instructions with example. [6]

b) Write the steps for executing an 64 bit assembly program on NASM. [4]

c) Write an assembly code for 64 bit architecture to display "WELCOME" on Screen for 5 times. [4]

OR

Q.8) a) Assuming the following values in the register BX= 38 and CX= 5AH, show the contents of the register after following Operation ROL BX,4 and SHL CX,4. Justify your answer. [6]

b) Differentiate between macro and procedure. [4]

c) Write an 64 bit assembly program to add two numbers assuming the numbers are in rax and rbx register (include comments in the code). [4]