

Total No. of Questions – [06]

Total No. of Printed Pages: 2

G.R. No.	
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**DECEMBER 2021 - ENDSEM EXAM**  
**S. Y. B. TECH. (COMPUTER ENGINEERING) (SEMESTER - I)**  
**COURSE NAME: COMPUTER ARCHITECTURE AND**  
**ORGANIZATION**  
**COURSE CODE : CSUA21202**  
**(PATTERN 2020)**

Time: [1 Hr]

[Max. Marks: 30]

**Instructions to candidates:**

- 1) Answer Q.1 OR Q.2, Q.3 OR Q.4, Q.5 OR Q.6.
- 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                      List the replacement algorithms and explain FIFO algorithm                      [4]

Q.1 b                      Draw and elaborate cache main memory structure                      [6]

OR

Q2 a                      List the mapping functions and discuss Direct mapping function                      [4]

Q2 b                      Draw and elaborate cache main read operation                      [6]

Q.3 a                      Represent floating point number 10.75 in single and double precision IEEE standard format                      [4]

Q.3 b                      Solve following binary multiplication using Booth's Algorithm                      [6]

**Multiplicand M=-4**

**Multiplier Q=7**

OR

Q.4 a                      Elaborate single and double precision format of IEEE 754 standard                      [4]

Q.4 b                      Solve following binary division using Restoring  
and restoring algorithm                      [6]  
                                 **Dividend M=7**  
                                 **Divisor Q=3**

Q.5 a                      Draw and elaborate the Program Status Word                      [4]  
(PSW).

Q.5 b                      Describe data flow fetch cycle with diagram                      [6]

OR

Q.6 a                      Design data flow indirect cycle and data flow                      [4]  
interrupt cycle

Q.6 b                      Describe in detail Data Hazards.                      [6]