ADAMAS UNIVERSITY PURSUE EXCELLENCE	**ADAMAS UNIVERSITY** **END-SEMESTER EXAMINATION : JANUARY 2021** (Academic Session: 2020 – 21)		
Name of the Program:	B. Tech.	**Semester:**	VII
Paper Title :	VLSI System Design	**Paper Code:**	EEC43102
Maximum Marks :	40	**Time duration:**	3 Hrs
Total No of questions:	8	**Total No of Pages:**	1

Answer all the Groups

Group A

Answer all the questions of the following $5 \times 1 = 5$

1. **a)** Name the various classes of integration and state the approximate number of on-chip components for each of them. [CO1]
b) Define ASIC. [CO1]
c) Define DRAM. [CO5]
d) Define Flash memory. [CO5]
e) Define fringing field capacitance. [CO2]

GROUP –B

Answer *any three* of the following $3 \times 5 = 15$

2. Draw the VLSI layout of CMOS NAND. [CO2, CO4]

3. Draw CMOS inverter switching characteristics. Derive the fall time and rise time for CMOS inverter. [CO2, CO4]

4. Segregate load capacitance into various components and define them. [CO2, CO3]

5. Draw and explain the stick diagram representation of a CMOS inverter. [CO1, CO4]

GROUP –C

Answer *any two* of the following $2 \times 10 = 20$

6. Define SRAM. What are the states on a SRAM cell? Discuss the advantages and disadvantages of SRAM? [CO5]

7. Explain read and write operation on a DRAM cell with suitable diagrams. [CO5]

8. Describe twin well CMOS fabrication process flow with shallow trench isolation. Draw appropriate diagrams for each step. [CO2, CO3]

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