



18. Which statement is true about temporary data storage memory? 1 K1 CO6  
 (a) It retains data even when the power is off.  
 (b) It is used for permanent data storage.  
 (c) It is used for archival purposes.  
 (d) It is typically faster than hard drive storage.
19. Which memory unit has the fastest access time? 1 K1 CO6  
 (a) Cache Memory (b) Hard Disk Drive (HDD)  
 (c) Random Access Memory (RAM) (d) Solid State Drive (SSD)
20. Which of the following is used in main memory? 1 K1 CO6  
 (a) DDR (b) DRAM (c) SRAM (d) PRAM

**PART - B (10 × 2 = 20 Marks)**

Answer ALL Questions

21. Define Stick Diagrams. 2 K1 CO1
22. Define Noise margin. 2 K1 CO1
23. Explain Differential Pass Transistor Logic. 2 K2 CO2
24. Explain Dual Rail Domino Logic. 2 K2 CO2
25. Give two applications of Monostable Sequential Circuits. 2 K1 CO3
26. What is Clock Skew? 2 K1 CO3
27. What is RTL in Verilog? 2 K1 CO4
28. What is System Tasks? 2 K1 CO4
29. Justify how carry look-ahead adder decreases the propagation delay to the least. 2 K1 CO5
30. What is Non-Volatile READ-WRITE Memory? 2 K1 CO6

**PART - C (6 × 10 = 60 Marks)**

Answer ALL Questions

31. a) Explain the DC transfer characteristic of CMOS inverter. 10 K2 CO1  
**OR**  
 b) Discuss the CV characteristics of the CMOS. 10 K2 CO1
32. a) Discuss in detail the characteristics of CMOS Transmission gates. 10 K2 CO2  
**OR**  
 b) Draw and explain the function of static CMOS. 10 K2 CO2
33. a) Explain the static power dissipation in CMOS circuits with necessary diagrams and expressions. 10 K2 CO3  
**OR**  
 b) Discuss in detail various pipelining approaches to optimize sequential circuits. 10 K2 CO3
34. a) Write the Verilog HDL code of 8\*1 Multiplexer using Gate Level Modeling. 10 K3 CO4  
**OR**  
 b) Construct a Verilog program for 2-bit magnitude comparator using data flow modelling. 10 K3 CO4
35. a) Explain the design and operation of 4 x 4 multiplier circuit. 10 K2 CO5  
**OR**  
 b) Discuss the details about speed and trade off. 10 K2 CO5
36. a) Explain the memory architecture and its control circuits in detail. 10 K2 CO6  
**OR**  
 b) Discuss Memory core its types in detail. 10 K2 CO6