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- Notes :
1. All questions carry marks as indicated.
 2. Solve Question 1 OR Questions No. 2.
 3. Solve Question 3 OR Questions No. 4.
 4. Solve Question 5 OR Questions No. 6.
 5. Solve Question 7 OR Questions No. 8.
 6. Solve Question 9 OR Questions No. 10.
 7. Solve Question 11 OR Questions No. 12.
 8. Due credit will be given to neatness and adequate dimensions.
 9. Assume suitable data whenever necessary.
 10. Illustrate your answers whenever necessary with the help of neat sketches.

1. a) Explain different addressing mode with example? 6
b) Explain different instruction format and write the following instruction into zero, one and two address instruction?
 $(A \times B) + (A + D)$ 7

OR

2. a) Explain multiple bus architecture with the help of diagram? 6
b) Explain the register transfer operation using single bus structure for following. 7
3. Solve following floating point binary 7
a) Generate the decimal from following floating point number.
1) 01000000000100000000000000000000
2) 001100000 101100000000000000000000
b) Represent following into IEEE single precision format 7
1) -0.3
2) 45.45

OR

4. a) Solve following using booth algorithm. 7

$$1011 \times \begin{array}{r} 0011 \\ \uparrow \\ \text{in 2's} \end{array}$$

b) Write a short note on
1) Guard bit 2
2) Rounding 2
3) Bit pair recording 3

5. a) Explain direct mapped cache with example? 6
b) Explain memory Hierarchy in detail? 7

OR

6. a) Explain the concept of paging and page table? 7
b) Write a note on flash memory? 6
7. a) Explain following 6
1) Programmed I/O
2) Interrupt Driven I/O
- b) What is Bus synchronization? Explain synchronous and asynchronous Buses? 7

OR

8. a) Explain DMA in detail? 7
b) Differentiate between Hard disk and Floppy disk. 6
9. a) What is mean by Branch prediction how the branch is predicted explain in detail? 7
b) What is mean by Hazard? Explain all types of Hazard in detail? 7

OR

10. a) Explain out of order execution in detail? 7
b) What is superscalar operation explain with the help of example? 7
11. a) Explain the basic concept of Parallel Processing? 6
b) Explain the classification of parallel architecture? 7

OR

12. a) Explain Array processor in detail? 7
b) What is multicore architecture explain in detail? 6



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The best time to plant a tree was 20 years ago. The second best time is now.

~ Chinese Proverb

