Generated Question Paper

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Total Questions: 30

Instructions:

- Read each question carefully
- Answer all questions to the best of your ability
- Show your work where applicable

Questions:

1. How does a doubly linked list differ from a singly linked list?

2. What is a data structure and why is it important?

3. What is a graph? Give an example of its application.

4. How does a stack work? Give a real-world example.

5. What is a balanced tree? Give an example.

6. What is the difference between depth-first and breadth-first search?

7. What is a circular queue and where is it used?

8. Describe the use of a hash table in programming.

9. What is a heap? Name its types.

10. What is a self-balancing binary search tree?

11. What is a deque (double-ended queue)?

12. What is a priority queue? Where is it useful?

13. What is a B-tree and where is it used?

14. What is a hash collision and how is it handled?

15. What are the main operations of a queue?

16. How do you detect a cycle in a linked list?

17. What is a skip list?

18. How do you reverse a linked list?

19. What is a circular linked list?

20. How do you traverse a binary tree?

21. What is a minimum spanning tree?

22. Explain the concept of recursion with respect to data structures.

23. What is a red-black tree?

24. How do you implement a stack using arrays?

25. How do you implement a queue using linked lists?

26. Explain the difference between an array and a linked list.

27. What is a sparse matrix?

28. What is a trie and where is it used?

29. What is a binary tree? Where is it used?

30. What is a dynamic array?

End of Question Paper