Tutorial Unit 4

MCA I Semester

PS01CMC35: Computer Fundamentals

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Short Questions/Objective Questions

1. What is data?
2. Give an example of data.
3. Define data structure.
4. List three needs of using data structure.
5. List two basic types of data.
6. List two operations of data structures.
7. Define primitive data structure.
8. Give two examples of primitive data structure.
9. Give an example of non-primitive data structure.
10. Give an example of non linear data structure.
11. Give an example of linear data structure.
12. Define an array.
13. Define stack.
14. List two applications of stack.
15. List operations on stack.
16. Define queue.
17. List operations on queue.
18. List two applications of queue.
19. Define (i) FIFO and (ii) LIFO.
20. What does head node contain in a linked list?
21. What is a binary tree?
22. What are uses of tree data structure?
23. List operations possible on tree data structure.
24. Define graph data structure.
25. Write two applications of graph data structure.

26. What are the applications of hashing?
27. Consider 7 buckets are available to store data. What is the position of number 12, if the hashing function key%7 is used?
28. Name two methods of searching.
29. What is the pre-requisite of a binary search?
30. Define bubble sort.

Big Questions

1. Define data and data structure. Also discuss uses and advantages of using the data structure.
2. Draw diagram of various types of data structure and explain each type in one line.
3. List and explain in one line various operations on data structure. Give
4. Differentiate linear and non linear data structure.
5. Define linear data structure. Explain static and dynamic linear data structures.
6. Write a short note on array.
7. Define a one dimension array called weights of 5 persons in real numbers. Calculate (i) minimum weight, (ii) maximum weight, and (iii) average weight of the 5 persons.
8. Define a two dimension array of your choice.
9. Write a short note on stack by explaining operations on the stack.
10. Write an outline of pop operation in a stack.
11. Write an outline of push operation in a stack.
12. Write a short note on queue by explaining operations on the stack.
13. Write an outline of insert operation in a queue.
14. Write an outline of delete operation in a queue.

15. Create a linked list of 5 integers called A.
16. Draw an example of tree data structure and show (i) root, (ii) branches, (iii) leaves, and (iv) subtree in the drawing.
17. Explain in detail the hashing data structure with its practical applications.
18. Explain linear search in detail by taking an example.
19. Explain binary search in details.
20. Give main difference between the binary search and linear search.
21. Explain bubble sort by taking an example.