

S.Y. B.Sc(CS) (Div – A & B) (Assignment – 2)

Q.A . Answer the following questions in one or two lines :

- 1) Define the term Big O notation .
- 2) What are the characteristics of an algorithm.
- 3) Define omega notation.
- 4) Which notation is used to denote lower bound.
- 5) What is time complexity of merge sort ?
- 6) Give the best case and worst case complexity of quick sort.
- 7) Which strategy is used to sort data using merge sort ?
- 8) Write the formula for calculating address of any element in row major representation of two dimensional array.
- 9) Calculate the address of element A[2][1] in a character array A[3][4] in the row major representation. (Assume base address = 100)
- 10) Define “Stable sorting method”.
- 11) Write the formula for calculating address of any element in column major representation of two dimensional array.

Q.B . Answer the following questions :

- 1) Write short note on time complexity.
- 2) Write short note on space complexity.
- 3) Write an algorithm for linear search.
- 4) Write algorithm for binary search. Also state its worst case time complexity.
- 5) Sort the following data using insertion sort method : 21 3 5 12 11 17 26.
- 6) Sort the following data in ascending order using bubble sort method :
Nashik , Ahmednagar , Pune , Baramati , Loni , Aurandabad
- 7) Sort the following elements using Bubble Sort. (Write all Passes) :
92 21 41 71 51 31 81
- 8) Show all the steps of sorting the following data using quick sort :
i) 24 30 27 32 11 21 19 ii) 25 15 5 60 10 45
- 9) Write a ‘C’ function to implement insertion sort method.
- 10) Sort the following data using merge sort method : 22 4 6 13 12 18 27.