Online Assessment (Even Sem/Part-I/Part-II Examinations 2019 - 2020

Course Name - Design and Analysis of Algorithms
Course Code - BCA403 / BCS402

* You can submit the form ONLY ONCE.
* Fill the following information for further process.

* Required

1. Email address *

2. Name of the Student *

3. Enter Full Student Code *

4. Enter Roll No *

5. Enter Registration No *

6. Enter Course Code *

7. Enter Course Name *

8. Select Your Programme *

Mark only one oval.

- Diploma in Pharmacy
- Bachelor of Pharmacy
- B.TECH.(CSE)
- B.TECH.(ECE)
- BCA
- B.SC.(CS)
- B.SC.(BT)
- B.SC.(ANCS)
- B.SC.(HN)
- B.Sc.(MM)
- B.A.(MW)
- BBA
- B.COM
- B.A.(JMC)
- BBA(HM)
- BBA(LLB)
- B.OPTOMETRY
- B.SC.(MB)
- B.SC.(MLT)
- B.SC.(MRIT)
- B.SC.(PA)
- LLB
- PGDHM
- Dip.CSE
- Dip.ECE
- Dip.EE
- Dip.CE
- Dip.ME
- MCA
- M.SC.(CS)

- M.SC.(ANCS)
- M.SC.(MM)
- MBA
- M.SC.(BT)
- M.TECH(CSE)
- LLM
- M.A.(JMC)
- M.A.(ENG)
- M.SC.(MATH)
- M.SC.(MB)

Answer all the questions. Each question carry one mark.

9. 1. Complexity the recurrence relation T(n) = 8T(n/2) +n^2

Mark only one oval.

- O (n)
- O (n^2)
- O (log2 n)
- O (n^3)

10. 2. Complexity of Tower of Hanoi problem is

Mark only one oval.

- O (n)
- O (n^2)
- O (2^n)
- None of these

11. 3. Complexity of the recurrence relation T(n) = T(n-1) +1

Mark only one oval.

- O (n^2)
- O (n)
- O (1)
- O (n-1)

12. 4. Which case of Master's theorem is applicable in the recurrence relation T(n)=0.5 * T(n/2)+1/n?

Mark only one oval.

- Case 3
- Case 1
- Master's theorem is not applicable
- Case 2

13. 5. How many passes are required to sort a file of size n by bubble sort method?

Mark only one oval.

- n^2
- n
- n-1
- n/2

14. 6. What is the result of the recurrences which fall under first case of Master's theorem (let the recurrence be given by T(n)=aT(n/b)+f(n) and f(n)=nc?

Mark only one oval.

- T(n) = O(n logba)
- T(n) = O(n c log n)
- T(n) = O(f(n))
- T(n) = O(n^2)

15. 7. Under what case of Master's theorem will the recurrence relation of binary search fall?

Mark only one oval.

- 1
- 2
- 3
- It cannot be solved using master's theorem

16. 8. Minimum number of moves required to solve a tower of hanoi problem with n disks is _____

Mark only one oval.

- 2^n
- 2^n - 1
- n^2
- n^2-1

17. 9. Master's theorem is used for?

Mark only one oval.

- solving recurrences
- solving iterative relations
- analyzing loops
- calculating the time complexity of any code

18. 10. The space factor when determining the efficiency of algorithm is measured by

Mark only one oval.

- Counting the maximum memory needed by the algorithm
- Counting the minimum memory needed by the algorithm
- Counting the average memory needed by the algorithm
- Counting the maximum disk space needed by the algorithm

19. 11. The time factor when determining the efficiency of algorithm is measured by

Mark only one oval.

- Counting microseconds
- Counting the number of key operations
- Counting the number of statements
- Counting the kilobytes of algorithm

20. 12. Ω - notation provides an asymptotic

Mark only one oval.

- Upper bound
- Lower bound
- One that is sandwiched between the two bounds
- None of these

21. 13. O- notation provides an asymptotic

Mark only one oval.

- Upper bound
- Lower bound
- Light bound
- None of these

22. 14. Space complexity of matrix_multiplication (A,B,C,n)?

Mark only one oval.

- O(n^2)
- O(n^3)
- O(n^2 log2 n)
- O(n log2 n)

23. 15. for i = 1 to n do sum = sum +A[i]; if i = = 100 then break; end if end for the time complexity of the above algorithm is

Mark only one oval.

- O(n - 100)
- O(n)
- O(100)
- None of these

24. 16. The Big-O notation of the expression f(n) = n log n + n2 + e^ log n is

Mark only one oval.

- O(n)
- O(n^2)
- O (n log n)
- O (e^log n)

25. 17. The Average case occur in linear search algorithm

Mark only one oval.

- When Item is somewhere in the middle of the array
- When Item is not in the array at all
- When Item is the last element in the array
- When Item is the last element in the array or is not there at all

26. 18. The operation of processing each element in the list is known as

Mark only one oval.

- Sorting
- Merging
- Inserting
- Traversal

27. 19. Which of the following approaches is adopted in Divide and Conquer algorithms?

Mark only one oval.

- Top-down
- Bottom-up
- both Top-down & Bottom-up
- None of these

28. 20. Division Pattern of Problems in Divide and Conquer approach

Mark only one oval.

- Iterative
- Recursive
- Parallel
- Random

29. 21. Run Time of Merge Sort is

Mark only one oval.

- Big oh of n log n
- Gamma of n log n
- Big theta of n log n
- Omega of n log n

30. 22. Which of the given options provides Steps of Divide and Conquer approach

Mark only one oval.

- Divide, Conquer and Combine
- Combine, Conquer and Divide
- Combine, Divide and Conquer
- Divide, Combine and Conquer

31. 23. Which of the following sorting algorithms does not have a worst case running time of O(n^2)

Mark only one oval.

- Quick sort
- Merge sort
- Insertion sort
- Bubble sort

32. 24. What is recurrence for worst case of QuickSort and what is the time complexity in Worst case?

Mark only one oval.

- Recurrence is T(n) = T(n-2) + O(n) and time complexity is O(n^2)
- Recurrence is T(n) = T(n-1) + O(n) and time complexity is O(n^2)
- Recurrence is T(n) = 2T(n/2) + O(n) and time complexity is O(n Logn)
- Recurrence is T(n) = T(n/10) + T(9n/10) + O(n) and time complexity is O(n Logn)

33. 25. Time Complexity of Activity Selection Problem

Mark only one oval.

- O(n)
- O(fi)
- O(n log n)
- None of the mentioned

34. 26. Which of the following is not true about QuickSort?

Mark only one oval.

- in-place algorithm
- pivot position can be changed
- adaptive sorting algorithm
- can be implemented as a stable sort

35. 27. The best case behavior occurs for quick sort is, if partition splits the array of size n into _____

Mark only one oval.

- n/2 : (n/2) – 1
- n/2 : n/3
- n/4 : 3n/2
- n/4 : 3n/4

36. 28. Best case time complexity for merge sort

Mark only one oval.

- O(n)
- O(1)
- O(log n)
- O(n log n)

37. 29. What is the worst case efficiency for a path compression algorithm?

Mark only one oval.

- O(n)
- O(log n)
- O(n log n)
- O(m log n)

38. 30. What is the time complexity of Kruskal's algorithm?

Mark only one oval.

- O(log v)
- O(e log v)
- O(e^2)
- O(v log e)