QP CODE: 25020935

25020935

Reg No : .....

Name : .....

B.Sc DEGREE (CBCS) REGULAR / REAPPEARANCE / MERCY CHANCE EXAMINATIONS, FEBRUARY 2025

Sixth Semester

B.Sc Bioinformatics Model III

CHOICE BASED CORE COURSE - BI6CBT01 - ALGORITHMS DATA STRUCTURE AND COMPILERS

2017 Admission Onwards

763017F5

Time: 3 Hours Max. Marks : 80

Part A

*Answer any **ten** questions.*

*Each question carries **2** marks.*

1. What is Graph?
2. What do you mean by Complexity of an algorithm?
3. Define flowchart.
4. What are the basic operations on a stack?
5. What is Sorting?
6. What is queue?
7. What do you mean by Divide and Conquer method?
8. Define breadth first search.
9. What is degree of a node?
10. What do you mean by *phase* in compilation?
11. How an interpreter differs from a compiler?
12. What is linked list?

(10×2=20)

Part B

*Answer any **six** questions.*

*Each question carries **5** marks.*

13. Discuss different asymptotic notations.

14. Write an algorithm to insert an element into an array.

15. Calculate the time complexity:

```
algorithm add(a,b,c,m.n)
{
for(i=1;i<=m;i++)
for(j=1;j<=n;j++)
c[i,j]=a[i,j]+b[i,j];
}
```

16. Evaluate the Postfix expression
    5,6,2,+,*,12,4,/,-

17. What is searching?

18. Briefly explain the multistage graph problem.

19. Briefly explain the knapsack problem.

20. Differentiate compiler and interpreter.

21. Briefly explain the lexical analysis.

(6×5=30)

Part C

*Answer any **two** questions.*

*Each question carries **15** marks.*

22. Write a note on Data structures.

23. Write an algorithm to perform linear search. Apply the algorithm in the given list of numbers.

    37 45 12 84 23 85 48 66 10 97
    Item=88

24. Explain the Prim's algorithm.

25. Explain the All Pairs shortest path algorithm.

(2×15=30)