

HOME ASSIGNMENT (2024 Batch)
Bachelor of Computer Application (BCA)
(SECOND SEMESTER)
CENTRE FOR DISTANCE AND ONLINE EDUCATION
DIBRUGARH UNIVERSITY
(Full Marks 30 for each course)

(ALL THE QUESTIONS GIVEN BELOW ARE COMPULSORY)

Course : BCA -201 (Mathematics –II)

ASSIGNMENT-I

Total Marks : 15

1. State and prove mean value theorem. 5

2. Evaluate

$$\int (2 - x) \sin x \, dx \quad 5$$

3. Evaluate

$$\lim_{x \rightarrow 0} \frac{1 - \cos x}{3x^2} \quad 5$$

Course : BCA -201 (Mathematics –II)

ASSIGNMENT-II

Total Marks : 15

1. Evaluate

$$\int \frac{x^2+1}{x^2-5x+6} \, dx \quad 5$$

2. Find the perimeter of the circle $x^2+y^2 = a^2$ 5

3. State and prove Rolle's Theorem. 5

Course : BCA -202 (Discrete Mathematics)

ASSIGNMENT-I

Total Marks : 15

1. Prove that the order of a subgroup of a group G divides the order of G. 5

2. Examine the linear dependence and independence of the following sets of vectors

(i) $\{(1,2,3), (3,-2,1), (1,-6,-5)\}$ (ii) $\{(1,1,1), (1,2,3), (2,3,8)\}$ 5

3. Show the set $\{x^3 - x + 1, x^3 + 2x + 1, x + 1\}$ is linearly independent in the vector space of all polynomials over the field of reals. 5

Course : BCA -202 (Discrete Mathematics)

ASSIGNMENT-II

Total Marks : 15

1. What is the difference between directed and undirected graph ? 5
2. Show that a simple graph with n vertices and k components cannot have more than $(n-k)(n-k+1)$ edges 5
3. Define tree. Discuss all its properties. 5

Course : BCA -203 (Data Structure using C and C++)

ASSIGNMENT-I

Total Marks : 15

1. Explain divide and conquer method with an example. 5
2. Describe PUSH and POP operation in stack. Explain how stack can be implemented. 5
3. What is a linked list ? Write a program in C++ to concatenate two singly linked list. 5

Course : BCA -203 (Data Structure using C and C++)

ASSIGNMENT-II

Total Marks : 15

1. Write a program to sort the N elements of an array in ascending order using Bubble sort technique. 5
2. Explain the various methods for tree traversal. 5
3. How can graphs be represented in Computer memory ? Give advantages and disadvantages of each representation. 5

Course : BCA -204 (Accounting and Financial Management)

ASSIGNMENT-I (Answer any three)

Total Marks : $5 \times 3 = 15$

- 1) Balance Sheet
- 2) Financial Management
- 3) PERSONAL accounts.
- 4) Cash book.

Course : BCA -204 (Accounting and Financial Management)

ASSIGNMENT-II (Answer any three)

Total Marks : $5 \times 3 = 15$

1. Fund Flow statement
2. Features of TRIAL BALANCE.
3. LIMITATIONS of Ratio Analysis.
4. ADVISORY functions of Financial Management.
5. Marginal Costing

Course : BCA -205 (Computer Architecture and Organization)

ASSIGNMENT-I (Answer any three)

Total Marks : 5×3=15

1. Define Bus Arbitration . Explain about different Bus arbitration processes. 5
2. What is the difference between Primary and Secondary memory ? 5
3. Explain the organization of a microprogrammed control unit and describe its operations. 5

Course : BCA -205 (Computer Architecture and Organization)

ASSIGNMENT-II (Answer any three)

Total Marks : 5×3=15

1. Explain how a DMA controller works. 5
2. Describe the I/O interface with an example. 5
3. Write a short note on Assembly language programming 5
4. Describe the working procedure of the Control Unit 5

Course : BCA -206 (Laboratory)

ASSIGNMENT-I (Answer any three)

Total Marks : 5×3=15

1. Write a program in C/C++ to sort the N elements of an array in ascending order using Bubble sort
2. Write a program in C/C++ to sort the N elements of an array in ascending order using Merge sort
3. Write a program in C/C++ to insert and delete element into a stack.
4. Write a program in C/C++ to insert and delete element from a queue.

Course : BCA -206 (Laboratory)

ASSIGNMENT-II (Answer any three)

Total Marks : 5×3=15

1. Write a program in C/C++ to delete node from a sorted linked list.
2. Write a program in C/C++ to traverse a tree in prefix order.
3. Write a program in C/C++ to convert infix to prefix.
4. Write a program in C/C++ to search an element using binary search.

Neeraj