DIRECTORATE OF OPEN AND DISTANCE LEARNING
DIBRUGARH UNIVERSITY
DIBRUGARH, ASSAM

No. DU/DODL/Assig/PG/Final/2023/ Date:16.11.2023

NOTIFICATION

(Modalities for Submission of Assignments for BCA Second Semester batches for the session 2023)

The Learners of the BCA Second Semester batches for the session 2023 are informed to submit the Assignments are as per the modalities mentioned below:

1. Learners shall have to submit two assignments (together) of 15 marks each in each course (Total marks 30 per course).
2. The Questions for the assignments are available in www.dodldu.in
3. Learners shall write the assignments in A4 size paper in own handwriting. For each course, multiple pages are to be stapled into one.
4. Learners shall keep a photo copy of the assignments in their safe custody.
5. The last date of submission of the assignments for BCA (Second Semester) batches in the Study Centers is **14th December, 2023**.
6. The learners shall write the following in the top of every assignment.

Home Assignment
Name of the Study Centre:
Name (BLOCK LETTER):
Programme:
Semester:
Course Code and Title:
Session: 2023
Roll No.:
D.U. Registration No. (if already registered):
Date of Submission:
Phone No.:

16/11/23

(Prof. D. K. Chakraborty)
Director in- charge
Directorate of Open and Distance Learning
Dibrugarh University

Copy to:
1. The Registrar, Dibrugarh University, for favour of information
2. The Assistant Director (Academic), DODL, D.U.
3. The Coordinators of the Study Centers under DODL, D.U.
4. The Convenor of the Website of the DODL, D.U.

HOME ASSIGNMENT – 2023
BCA (Second Semester)

Course : 201 (Mathematics –II) **Marks – 30**

(Answer any six)

1. State and prove mean value theorem. 5
2. Evaluate
   $\int (2-x)\sin x\, dx$ 5
3. Evaluate
   $\lim_{x\to 0} \frac{1-\cos x}{3x^2}$ 5
4. Evaluate
   $\int \frac{x^2+1}{x^2-5x+6} dx$ 5
4. Prove that
5. $\int_0^{\pi} \frac{x}{1+sin^2 x} dx = \frac{\pi^2}{2\sqrt{2}}$ 5
6. State and prove Rolle's Theorem. 5
7. Find the perimeter of the circle $x^2+y^2 = a^2$ 5

Course : 202 (Discrete Mathematics) **Marks – 30**

(Answer any six)

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 linealy independent in the vector space of all polynomials over the field of reals. 5
4. What is the difference between directed and undirected graph ? 5
5. Show that a simple graph with n vertices and k components cannot have more than $\frac{(n-k)(n-k+1)}{2}$ edges 5

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6. Explain Dijkstra's algorithm with an example. 5

7. Define tree .Discuss all all its properties. 5

Course : 203 (Data Structure using C and C++) Total marks : 30

(Answer any six)

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 circular queue ? How is it different from queue. 5
4. Compare and contrast between a binary and a binary search tree. 5
5. What is a linked list ? Write a program in C++ to concatenate two singly linked list. 5
6. Explain the various methods for tree traversal. 5
7. How can graphs be represented in Computer memory ? Give advantages and disadvantages of each representation. 5

Course -204 (Accounting and Financial Management) Total marks : 30

(Answer any six)

1) Balance Sheet 5
2) Convention of CONSERVATISM 5
3) Financial Management 5
4) PERSONAL accounts. 5
5) Cash book. 5
6) Fund Flow statement 5
7) Features of TRIAL BALANCE. 5
8) LIMITATIONS of Ratio Analysis. 5
9) ADVISORY functions of Financial Management. 5
10) Marginal Costing 5

Course – 205 (Computer Architecture and Organization) Total marks : 30

(Answer any six)

1. What is Addressing mode ? Explain the different Addressing modes . 5
2. What are the main parts of Von Neumann Architecture ? Explain with diagram. 5

3. What is the difference between Primary and Secondary memory ? 5
4. Explain the organization of a microprogrammed control unit and describe its operations. 5
5. Explain how a DMA controller works. 5
6. Describe the I/O interface with an example. 5
7. Write a short note on Assembly language programming 5

Course -206 (Laboratory) **Total marks : 30**

(Answer any six)

1. Write a program in C/C++ to sort the N elements of an array in ascending order using Bubble sort 5
2. Write a program in C/C++ to sort the N elements of an array in ascending order using Merge sort 5
3. Write a program in C/C++ to insert and delete element into a stack. 5
4. Write a program in C/C++ to insert and delete element from a queue. 5
5. Write a program in C/C++ to delete node from a sorted linked list. 5
6. Write a program in C/C++ to traverse a tree in prefix order. 5
7. Write a program in C/C++ to convert infix to prefix. 5
8. Write a program in C/C++ to search an element using binary search. 5

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