Jamia Hamdard

School of Open and Distance Learning

JH/SODL/BCA/II Year/Assignments/2020
May 12, 2020

SUB: ASSIGNMENTS OF BCA II YEAR – 2019 - 20

Dear learner,

As per the decision taken by the competent authority of Jamia Hamdard, students of BCA II Year of 2019 – 20 batch would be promoted to BCA III Year without conducting their annual examination June, 2020. They shall be however be promoted on the basis of the Assignments submitted by them.

We herewith are giving the following 10 Assignments one each of the courses / subjects of your BCA II Year. Each assignment consists of 100 marks, having five questions. Each question carries 20 marks.

Assignment 1: BCAD - 301: Computer System Architecture
Assignment 2: BCAD - 302: Objective Oriented Programming in C++
Assignment 3: BCAD - 303: System Analysis and Design
Assignment 4: BCAD - 304: Database Application in MS Access
Assignment 5: BCAD - 305: Lab - I (C++ Application Development)
Assignment 6: BCAD - 401: Numerical and Statistical Analysis
Assignment 7: BCAD - 402: Data Structure in C
Assignment 8: BCAD - 403: Computer Networks
Assignment 9: BCAD - 404: Subject: Web Technology
Assignment 10: BCAD - 405: Lab - II: Implementation Data Structures in C

GUIDELINES FOR ASSIGNMENT SUBMISSION

1. Use A4 size ruled paper for writing the assignments.
2. Answer All Questions of all the 10 assignments.
3. Keep Cover Page of each Assignment in the format given below.
4. Each Assignment needs to be submitted separately.
5. The Assignment **should be hand written only**. Typed assignments will not be accepted.
6. You are advised to write your answers in your own words referring to the study material / books / journals.
7. Do not copy from other students. If we find two or more assignments similar / ditto, we shall fail all the similar / ditto looking assignments.
8. If any of the above mentioned guidelines are not followed then the assignment will not be consider for evaluation and will be marked absent.
9. Qualifying in the assignments is essential for your promotion to BCA II Year.
10. **Scan the Hand Written Assignments** and submit at **sodlbcaassignments@gmail.com**
12. **Last Date of submission of all the Assignments is 15th June, 2020**.
13. For any doubt, query related to the Assignments, please write to / contact the respective Teacher.

All the Best. Stay at Home, Study at Home and Be Safe!

Prof. Masood Parveez
Dean, School of Open and Distance Learning
Jamia Hamdard, New Delhi – 110 062
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JAMIA HAMDARD
Department of Computer Science & Engineering
School of Engineering Sciences & Technology
New Delhi-110 062

Study Centre - 1012

ASSIGNMENT COVER PAGE

Course / Subject Code: _____

Subject Title: _____

SUBMITTED TO

Name of the Teacher:
Prof./Dr./Mr./Ms._____

SUBMITTED BY

Name of the Student: _____

Enrolment Number:_____

Roll Number (If Allotted):_____

Mobile Number: _____

Email ID: _____

LAST DATE FOR SUBMISSION OF ASSIGNMENT

JUNE 15, 2020 (MONDAY)

JAMIA HAMDARD
Department of Computer Science & Engineering
School of Engineering Sciences & Technology
New Delhi - 110 062

Assignments of BBA II Year (ODL): 2019 - 20

1. COURSE / SUBJECT CODE: BCAD-301: COMPUTER SYSTEM ARCHITECTURE
Maximum Marks – 100. Attempt all the questions. All questions carry equal marks.

Q1. Write truth table for EX-OR and EX-NOR logic gates.
Q2. State and prove the De Morgan theorem.
Q3.Simplify f(A,B,C,D)=∑ 2,6,7,12,13
Q4.Draw the circuits design for full adder.
Q5.Explain with a logic diagram the working of a 4-stage synchronous counter.

Name of the Teacher: Dr. Nasseem Rao
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2. COURSE / SUBJECT CODE: BCAD-302: OBJECTIVE ORIENTED PROGRAMMING IN C++
Maximum Marks – 100. Attempt all the questions. All questions carry equal marks.

Q1. What do you mean by constructor? Write a program to show constructor overloading.
Q2. What is multilevel inheritance?Explain it with proper example.
Q3. What do you mean by friend function? Explain it with proper example.
Q4. Define a class to represent a bank account. Indicate the following member.

Data Members

a. Name of depositor.
b. Account number.
c. Type of account.
d. Balance amount in the account.

Member Functions

a. To assign initial values.
b. To deposit an amount.
c. To with draw and amount after checking the balance.
d. To display name and balance.

Q5. What is the difference between call-by-value and call-by-reference in a user defined function in C++ ? Give an example to illustrate the difference.

Name of the Teacher: Mr. Tabrej Ahmad Khan
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3. COURSE / SUBJECT CODE: BCAD - 303: SYSTEM ANALYSIS AND DESIGN
Maximum Marks: 100. Attempt all the questions. All questions carry equal marks.

1. Who is system analyst? List and explain the skills required in a system analyst. Discuss the roles and responsibilities in terms of their duties that have to be carried out by a System Analyst.

2. What is DFD? Describe the concept and procedure used in constructing DFDs. Consider "University Information System" (UIS) wherein a university provides information about its programmes etc. Draw DFDs up to 2 levels depicting various processes, data flows and data repositories after making necessary assumptions.

3. What is a fact finding technique? Discuss the various fact finding techniques used in system study. Explain what kind of fact finding techniques should be used for deciding the design of a new application for a library of an institution. Make necessary assumptions.

4. What is System Implementation? Explain the process of system implementation and Maintenance. List the different methods of system Implementation and explain them with suitable example.

5. Explain the following with an example:

   (i) Gantt Chart
   (ii) PERT Chart
   (iii) Decision Table
   (iv) Decision Tree
   (v) Distributed DBMS Architecture

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4. COURSE / SUBJECT CODE: BCAD - 304: DATABASE APPLICATION IN MS ACCESS
Maximum Marks: 100. Attempt all the questions. All questions carry equal marks.

Q1: What is a database? How is it different from DBMS? Explain the structure of DBMS with diagram.
Q2: What is normalization? What are the three types of anomalies found in a database? Explain BCNF.
Q3: What is SQL? What are Queries? Explain two ways to create or design a Query.
Q4: Explain Data Models and write its advantages. What are the different types of data models? Explain ER Model and Hierarchical Model.
Q5: What are different DQL commands? Explain with examples. What are data types in SQL? Give examples.

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5. COURSE / Subject CODE: BCAD - 305: LAB - I (C++ APPLICATION DEVELOPMENT)
Maximum Marks: 100. Attempt all the questions. All questions carry equal marks.

1. Write a program in C++ to swap two numbers.
2. Write a program in C++ to calculate sum of natural numbers.
3. Write a program in C++ to find Factorial.
4. Write a program in C++ to reverse a number.
5. Write a program in C++ to check whether a number is palindrome or not.

Name of the Teacher: Mr. Md. Onais Ahmad
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6. COURSE / Subject CODE: BCAD - 401: NUMERICAL AND STATISTICAL ANALYSIS
Maximum Marks: 100. Attempt all the questions. All questions carry equal marks.

Q1. Define different type of errors. Round off the number 37.46235 to four significant figure and compute different type of errors.
Q2.Explain methods of false position in detail $x^3-9x+1=0$, for the root lying between 2 and 4 using Regular - Falsi method.
Q3. What do you mean by regression analysis? How it is used in prediction problems explain with example.
Q4. Calculate $\int_0^1 e^x dx$ correct to four decimal place using Simpson's 1/3 rule.
Q5.(a) Solve $\frac{dy}{dx} = x+y$; y(0)=1 by Taylor's series method. Hence find the values of y at x = 0.1 and x = 0.2.
(b) Find the least square fit of the form $y=a_0+a_1x^2$ to the following data:

x	-1	0	1	2
y	2	5	3	0

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7. COURSE / SUBJECT CODE: BCAD - 402: SUBJECT: DATA STRUCTURE IN C
Maximum Marks: 100. Attempt all the questions. All questions carry equal marks.

Question1. Define data structure. What are the different types of data structure? Explain in detail. What are the different operations we can perform on data structure? What do you mean by time and space complexity in algorithm?

Question 2. What is linked list? Explain in details with suitable example. Implement the method insertAt(Item x, int n), which should insert an element at index n into the list. If the index is out of bounds, the exception Illegal Argument Exception should be thrown. What is the time complexity of this method?

Question 3. Implement the method remove At (int n), which should remove an element at index n from the list. If the index is out of bounds, the exception Illegal Argument Exception should be thrown. What is the time complexity of this method?

Question 4. Define Stack and Queues with example. Show how to implement a queue using 2 stacks (diagram and pseudo code needed). What are the space and time complexities of enqueue() and dequeue() operations?

Question 5. What is the worst-case time complexity of Bubble Sort algorithm? Show how you derive the complexity.

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8. SUBJECT / COURSE CODE: BCAD - 403: COMPUTER NETWORKS
Maximum Marks: 100. Attempt all the questions. All questions carry equal marks.

Q1. What are the two ways of communicating, displaying and storing of information?
Q2. What are coxial cables? Discuss its advantage and disadvantages over other cables.
Q3. Briefly describe serial transmission.
Q4. What are different types of modulation and explain it.
Q5. Explain the OSI reference model with the help of illustrations and examples.

Name of the Teacher: Dr. Nasseem Rao
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9. COURSE / SUBJECT CODE: BCAD - 404: WEB TECHNOLOGY
Maximum Marks: 100. Attempt all the questions. All questions carry equal marks.

Q1 (a). What is Internet? Discuss FTP and Email with suitable diagrams.
Q1 (b). Differentiate between Intranet and Extranet. Discuss the issues associated with Firewall Design.

Q2. Use HTML to create a short summary of your professional profile that must include your photograph, your academic details in tabular form, a list of your achievements, and a link to your website (assuming that you have one) in addition to other relevant information.

Q3 (a). What are HTML forms? Create an HTML form (design with HTML code) that includes text boxes, radio buttons and submit button.
Q3 (b). What are Web Browsers? Describe the elements of a Browser Window.

Q4 (a). What is JavaScript? Mention its capabilities.
Q4 (b). Discuss the advantages of using JavaScript. Write a program in JavaScript to calculate the area of a triangle.

Q5. Write short notes:

i. XML
ii. DHTML
iii. E-Commerce
iv. CSS

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10. COURSE / SUBJECT CODE: BCAD-405: LAB-II: IMPLEMENTATION DATA STRUCTURES IN C
Maximum Marks: 100. Attempt all the questions. All questions carry equal marks**.**

Q1. What is data structure write its importance with reference to “C” language?
Q2. Create record of a student data by using Multidimensional Array?
Q3. Define binary tree with and example?
Q4. Define Bubble sort with an example?
Q5. Write short note on Graph and its implementation?

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LAST DATE FOR SUBMISSION OF THE ASSIGNMENT

JUNE 15, 2020 (MONDAY)