

Jamia Hamdard
School of Open and Distance Learning

JH/SODL/BCA/II Sem /Assignments/2020
June 10, 2020

SUB: ASSIGNMENTS OF BCA 2nd Semester– 2019 - 2020

Dear learner,

As per the decision taken by the competent authority of Jamia Hamdard, students of BCA 2nd semester of 2019 – 20 batch would be promoted to BCA 3rd semester 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 7 Assignments one each of the courses / subjects of your BCA 2nd semester. Each assignment consists of 100 marks, having five questions. Each question carries 20 marks.

S No	Paper Code	Subject	Name of the Faculty
1	BCAD 201	Introduction to Data Structures	Mr. Aqeel Khaliq
2	BCAD 202	Data Communication and Computer Networks Basics	Dr. Naseem Rao
3	BCAD 203	Fundamental Concepts of Operating Systems	Mr. Shah Imran Alam
4	BCAD 204	Elementary Physics	Dr. Naseem Rao
5	BCAD 205	Data Structures Lab	Mr. Md Onais Ahmad
6	BCAD 206	Unix/Linux Lab	Dr. Safdar Tanweer
7	BCAD ES	Environmental Sciences	Mr. Aqeel Khaliq

GUIDELINES FOR ASSIGNMENT SUBMISSION

1. Use A4 size ruled paper for writing the assignments.
2. Answer All Questions of all the 7 assignments.
3. Keep Cover Page of each Assignment in the format given below.
4. Each Assignment needs to be submitted separately.
5. The Assignments 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 3rd semester.
10. **Scan the Hand Written Assignments and submit at sodlbcaassignments@gmail.com**

12. Last Date of submission of all the Assignments is 25th 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 / SubjectCode: _____

SubjectTitle: _____

SUBMITTED TO

Name of the Teacher:

Prof./Dr./Mr./Ms. _____

SUBMITTED BY

Name of theStudent: _____

EnrolmentNumber: _____

Roll Number (If Allotted): _____

Mobile Number: _____

Email ID: _____

LAST DATE FOR SUBMISSION OF ASSIGNMENT
JUNE 25, 2020 (Thursday) at
sodlbcaassignments@gmail.com

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

Assignments of BCA 2nd Semester (SODL): 2019 – 20

1. COURSE / SUBJECT CODE: BCAD - 201: INTRODUCTION TO DATA STRUCTURES

Maximum Marks – 100. Attempt all the questions. All questions carry equal Marks.

- Q1. What are data structures in C? Describe all primitive and derived data structures with their applications.
Q2. Write a program in C using switch case to sort 100 numbers entered by the user. Use switch case to ask user for algo to be used. Program must use Selection Sort, Merge Sort, Insertion Sort and Bubble Sort. Show your output for different choices.
Q3. What is infix, prefix and postfix notation. Give example for all conversion taking any expression.
Q4. Explain Stack, Queue and Linked List with example.
Q5. Explain Binary Tree and show with example working of BFS and DFS algo.

Name of the Teacher: Mr. Aqeel Khalique
Mobile No: 9899006453
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2. COURSE / SUBJECT CODE: BCAD-202: DATA COMMUNICATION AND COMPUTER NETWORK BASICS

Maximum Marks – 100. Attempt all the questions. All questions carry equal Marks

- Q1 (a) What is TCP/IP protocol?
(b) Explain the computer network and also explain network topologies.
- Q2 (a) Define data communication.
(b) Write The difference between FDM and TDM.
- Q3 (a) Explain the circuit switching and packet switching.
(b) Explain the digital subscriber line.
- Q4 (a) Explain the error detection and error correction techniques.
(b) Explain the multiple access protocol.
- Q5 (a) Explain the transport and application layer.
(b) Define WWW and HTTP protocol.

Name of the Teacher: Mr. Dr. Naseem Rao
Mobile No: 8076526814
Email ID: naseemjmi0786@gmail.com

3. COURSE / SUBJECT CODE: BCAD-203: FUNAMENTAL CONCEPTS OF OPERATING SYSTEM

Maximum Marks – 100. Attempt all the questions. All questions carry equal Marks.

1. a) Define operating system. Explain the various responsibilities of operating System.
b) Explain the multiprogramming and multiprocessing operating systems.
2. a) Define the process control block. Explain the life cycle of process with a neat diagram.
b) Explain the following process scheduling algorithm: First cum first serve, Shortest Job first, Priority scheduling and round robin scheduling algorithm.
3. a) Explain the deadlock. Explain the necessary conditions for deadlock.
b) Consider the following snapshot

Process	Allocation				Max				Available			
	A	B	C	D	A	B	C	D	A	B	C	D
P0	0	0	1	2	0	0	1	2	1	5	2	0
P1	1	0	0	0	1	7	5	0				
P2	1	3	5	4	2	3	5	6				
P3	0	6	3	2	0	6	5	2				
P4	0	0	1	4	0	6	5	6				

By using banker's algorithm check whether the system is in safe state or not.

4. a) Define virtual memory. Explain the various page replacement algorithms.
b) How many page faults occur for FCFS, optimal page replacement algorithm and LRU algorithm for the following reference string, for four page frames?
1, 2, 3, 4, 5, 3, 4, 1, 6, 7, 8, 7, 8, 9, 7, 8, 9, 5, 4, 5, 4, 2.
5. For the process listed in the table calculate the average wait time and turnaround time by using
 - i. First-Come First Served
 - ii. Shortest Job First
 - iii. Shortest Remaining Time (Preemptive)
 - iv. Round Robin (Quantum = 1)

Process	Arrival Time	Processing Time
A	0.000	4
B	2.001	7
C	3.001	2
D	3.002	2

Name of the Teacher: Mr. Shah Imran Alam
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Email ID: shahimranalam@gmail.com

4. COURSE / SUBJECT CODE: BCAD – 204 ELEMENTARY PHYSICS

Maximum Marks – 100. Attempt all the questions. All questions carry equal Marks

- Q1. (a) State the Newton's laws.
(b) Explain the periodic and oscillatory motion.
- Q2. (a) Explain the coulombs law.
(b) What is the silent feature of electromagnetic spectrum.
- Q3. (a) What do you understand by the LASER?

(b) explain the working of Ruby laser.

Q4. (a) What is the fiber optics and also explain its application.
(b) Explain the step index and graded index.

Q5. (a) What is the semi-conductor and also explain its classification of materials on the basis of band gap.

(b) Explain the working of light emitting Diode (LED).

Name of the Teacher: Mr. Dr. Naseem Rao
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Email ID: naseemjmi0786@gmail.com

5. COURSE / SUBJECT CODE: BCAD-205DATA STRUCTURES LAB

Maximum Marks – 100. Attempt all the questions. All questions carry equal Marks

- Q1. What is data structure? Write its importance in brief.
Q2. In what areas do data structures are applied?
Q3. Explain Binary Search Tree with example?
Q4. Define Bubble sort with an example?
Q5. Define stack and queues with example?

Name of the Teacher: Mr. Md. Onais Ahmad
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6. COURSE / SUBJECT CODE: BCAD-206: UNIX/LINUX LAB

Maximum Marks – 100. Attempt all the questions. All questions carry equal Marks

- Q1. Write the use and syntax of this general purpose command Unix command
a) date b) who c) who am I d) passwd e) echo.
- Q2. What are the basic components of Linux?
Q3. Write a shell script to find out whether the given number is prime number or not
Q4. What is grep command?
a) Write a grep command that selects the lines from the file1 that have exactly three characters
b) Write a grep command that selects the lines from the file1 that have at least three characters.
- Q5. Write a command that will display all .txt files, including its individual permission.

Name of the Teacher: Dr. SafdarTanweer
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Email ID: safdartanweer@yahoo.com

7. COURSE / SUBJECT CODE: BCAD-ES: ENVIRONMENTAL SCIENCES

Maximum Marks – 100. Attempt all the questions. All questions carry equal marks

- rr
- Q1. Explain types of pollutions with diagram.
 - Q2." In the last few years there has been a problem with the climate conditions". Discuss the issues that it may face in the years to come.
 - Q3. Describe characteristic features and type of aquatic ecosystem.
 - Q4. Define environment pollution .What are the cause effects and control measures of air pollution?
 - Q5. Discuss sustainable environmental practices in light of current global scenario.

Name of the Teacher: Mr. Aqeel Khaliq
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Email ID: aqeelkhalique@gmail.com

LAST DATE FOR SUBMISSION OF THE ASSIGNMENT
JUNE 25, 2020 (THURSDAY)
At
sodlbcaassignments@gmail.com