Sai Nath University

Assignment For BCA 3RD Sem.

The Assignment will consist of two parts, A and B. Part A will have 5 short answer questions(40-60 words) of 4 marks each. Part B will have 4 long answer questions of 5 marks each

All questions are compulsory.

These Assignments should be completed and submitted in written form by the student to his/her respective Faculty/ Examiners. Assignment Submission Dates are:

- Nov-17

List Of Suggested Questions

The list of suggested questions are for students to practice. Although optional, we recommend that students solve these questions, as they will help them in preparing for exams as well as in clearing the important concepts of the subject.

List of Practical and suggested practical's

The list of practical's should be done by the students in their Lab Sessions. These are the basic practical's, which each student should be able to do himself independently. While the list of suggested practicals are optional, but it is recommended that students should perform those practical so as to have a thorough knowledge of the subject

Education Delivery Schedule (EDS)

As per University Semester scheme, the minimum contact hours of each paper has been Divided into two hours theory and practical class.
The faculty will maintain this attendance paper wise for his/her batch.

Subject Code	Subject Name
BCA-310	**Data Structures**
BCA-320	**Computer System Architecture** **Digital Electronics**
BCA-330	**Operation System**
BCA-340	**Java Programming**
BCA-350	**Practical**

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Cover page of Assignment

ID NUMBER ……

NAME …… ……

COURSE BCA

STREAM ……

SEM 3RD ……

SUBJECT CODE ……

SUBJECT NAME ……

Assignments will be completed by the Student in his/her own handwriting.

BCA-310
Data Structure
Part A

1. Write a program in 'C' language to implement Quick Sort.
2. Write a program in 'C' language that accepts a file as input and prints the number of alphabets in it. Write a program in 'C' language for the implementation of a Singly Linked List
3. Write a program in 'C' language that accepts a string as input and prints the number of vowels in it.
4. Write a program in 'C' language for the multiplication of two Sparse Matrices.
5. Write a program in 'C' language that accepts a Singly Linked List as input and reverses it.

Part B

1. Differentiate between sequential search and binary search. Write their algorithms and analyze the techniques for complexity.
2. Write an algorithm to add two polynomials when they are represented using linked lists.

BCA-302
[Computer System Architecture Digital Electronics]
Part A

1. Explain the logic diagram of a 3 x 8 Decoder.
2. Explain three Displacement Addressing mechanisms with the help of examples.
3. (23.125) 10 to Hexadecimal number.
4. (6B•28) 16 to Binary number .
5. What are the various fields of a simple instruction ? Explain with the help of a diagram.

Part B

1. Simplify the following function using K-map :
   F(A, B, C, D) = 1(2, 6, 10, 14)
   Draw the resultant logic diagram.
2. What are flip-flops ? Describe the construction of a master-slave flip-flop using R-S flip-flops.
3. What is an interrupt ? Explain the processing of an interrupt in 8086 microprocessor with the help of a diagram.
4. Explain the use of Code Segment (CS) and Data Segment (DS) registers in 8086 microprocessor with the help of examples.

BCA-303
[Operating System]
Part A

1. Explain the main purpose of an operating system?
2. What are the advantages of a multiprocessor system?
3. Describe the objective of multiprogramming.
4. Give some benefits of multithreaded programming.
5. What necessary conditions can lead to a deadlock situation in a system?

Part B

1. How does swapping result in better memory management?
2. Explain the OS as a recourses manager.
3. Briefly explain the PCB (Process Control Block)
4. Describe different types of process schedule technique.

BCA-304
[Java Programming]
Part A

1. What is Object Oriented Programming? Explain concepts of object and class, with the help of example of each.
2. What is inheritance? How it provides flexibility in application development? Explain with the help of an example.
3. What is inheritance? How it provides flexibility in application development? Explain with the help of an example.
4. What is multithreading? Explain various applications where multithreading may be used. Also explain how threads are created in java.
5. Explain the situations in which constructors are overloaded, with the help of example.

Part B

1. What is an exception? Explain various causes of exceptions. Explain different types of exceptions.
2. Write a java program to demonstrate handling of multidimensional array in java.
3. Explain with an example, how array of objects are created in java.
4. Explain why java is platform independent.

BCA-305
[Practical]
Part A

1. Write a program to exchange the first element with the last element in an array.
2. Write a program to find and display all numbers greater than 20 and less than 250 that are divisible by 4 and 5.

3. Write a java program to create Date class with proper constructor, to create object containing date and time. Define a method to display current date and time. Make necessary assumptions required.

4. Write a java program to create an Account class and define methods in it, to manage saving bank account.

5. Explain concept of polymorphism with the help of example.

Part B

1. Write a Java program to create Player class. Derive Cricket_Player and Football_Player classes from Player class. Define proper constructor for all the classes. Also define Display_Info method in all the three classes to display details of the players.
2. Write a Java program to add two matrices, with proper implementation of exception handling mechanism
3 . What is the purpose of a finally block? Is it necessary that every try block has it? Give an example of code to explain.
4 Write a Java program to set the font of your string as "Verdana", font size as "16" and font style as "FONT.BOLD".

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