

DATA STRUCTURES USING C LANGUAGE

PRACTICAL QUESTIONS FOR BCA-P1 (LAB-1)

1. Write a program to calculate the area and circumference of a circle using the relation. ($\text{Area} = \pi r^2$) and $\text{circumference} = 2\pi r$.
2. Write a program to find the grade obtained by the students of a class.
3. Write a program to find the largest and the smallest from the given three integers.
4. Write a program to find sum, difference, product and quotient of any two integers as per the choice of the user.
5. Write a program to print a chart showing the temperature in centigrade from 0° to 100° to with their corresponding values in Farenhiet, using while loop and using the relation $C / 5 = F - 32 / 9$
6. Write a program to print the square and cube of n natural numbers using while loop.
7. Write a program to check whether a given integer is even or odd or zero. The program should continue until a 0 is entered from the keyboard.
8. Write a program to solve a quadratic equation.
9. Write a program to prepare the pay bill for the employees of a company
10. Write a program to check prime and unprime numbers.
11. Write a program to print the Fibonacci series for any number of terms.
12. Write a program to calculate the interest and total amount to be paid by entering the amount of loan and the number of years, either by simple interest method or by compound interest method as per the choice of the user.
13. Write a program to calculate the LCM and HCF of any set of positive integers.
14. Write a program to delete any element from any array.
15. Write a program to copy the value of one string variable to another variable.
16. Write a program to concatenate two strings.
17. Write a program to check whether any given word is a palindrome or not.
18. A company maintains the record of their employees as : Name, designation , Details of the pay like Gross pay, Provident Fund deductions, Professional tax and the Net pay. Keep the details of the pay within a separate structure
19. Accept ten names and print the given names in opposite order using array of pointers.
20. A program to search data from any array.
21. A program of selection sort , Bubble sort, Quick sort
22. To find the product of two matrices.

PRACTICAL QUESTIONS FOR BCA-P1 (LAB-1)

MS-OFFICE

Questions setting in the form of paragraph setting, Text formatting, alignment, Tap setting, creating tables including Mail Merge.

PRACTICAL EXERCISES FOR BCA-P2 (LAB 2)

VISUAL BASIC PROGRAMMING

1. To write a Visual Basic application for calculator that will perform simple as well as complex calculations.
2. To write a Visual Basic application for inserting and deleting strings from the list box.
3. To develop a visual basic application for displaying the contents of the selected file using the file list box , directory list box and drive list box.
4. To write a Visual Basic application to make a label to scroll from left to right and vice versa and change the mouse icon at each of the 8 * 8 cells.
5. To create a menu editor with cut, copy and paste operations and search the word in the text.
6. To create a Visual Basic application for a basic designer for drawing Line, Circle, Rectangle, Ellipse and Triangle.

WINDOWS PROGRAMMING

1. Activate the start menu and view the options available.
2. See the contents of the programs option.
3. Start a Paint Application.
4. Start a Note pad Application.
5. Minimize note pad Application.
6. Maximize the paint Application.
7. Write a small note in Note pad and save.
8. Calculate $259650 * 7659$ and see the result.
9. Go to the Dos prompt and find out the number of files in C : drive.
10. Go back to the windows desktop.
11. Change the wall paper of the Desktop.
12. Change the appearance of windows in your system by changing the color settings.
13. Set and appropriate screen saver using the control panel.

SOFTWARE ENGINEERING

1. Describe as many source of information as you can think of that should be consulted in order to perform a domain analysis for each of the following systems.
 - a. Airline Reservation System
 - b. The investments System
2. You are developing a system for managing the processes of a small town public library. List all the actors for this system.
3. An organization has three categories of employees : Professional staff, technical staff and support staff. The organization also has departments and divisions. Each employee belongs to either a departments or a divisions. Draw a class diagram corresponding to this. Assume that there will be different attributes or operations

- in all the classes, and that people will never need to change from one category to another.
4. Show a hierarchy of vehicle parts. Show how this hierarchy might be better represented using the General Hierarchy pattern.
 5. Imagine you were planning to develop the following types of software projects. What different kinds of users should you anticipate? Consider each of the issues mentioned.
 - a. An air – traffic control system
 - b. A payroll system
 6. Develop E-R diagram for the following
 - a. Customers make orders
 - b. People work in departments
 - c. Customers buy items
 - d. Deliveries of parts are made to customers.
 7. The list of problems that are to be attempted during the prescribed lab sessions
 - a. Project Planning
 - b. Requirement Analysis
 - c. Design
 - d. Testing
 8. Data flow model of a car assembly plant.
 9. Assume that the size of an organic type software product has been estimated to be 32,000 lines of source code. Assume that the average salary of software engineers is Rs.15,000 per month. Determine the effort required to develop the software product and the nominal development time.
 10. How to document the Functional Requirements?
 - a. Withdraw Cash from ATM
 - b. Search Availability in Library
 11. Draw level 0 (context level) and level 1 data flow diagrams for the following students' Academic Record Management Software.
 - a. A set of courses are created. Each course consists of a unique course number, number of credits, and the syllabus.
 - b. Students are admitted to courses. Each student's details include roll number, address, semester number and the courses registered for the semester.
 - c. The marks of a student for various units credited are keyed in.
 - d. Once the marks are keyed in, the SWA (semester weighted average) is calculated.
 - e. The recent marks of a student are added to his previous marks and a weighted average based on the credit points for various units is calculated.
 - f. The marks for the current semester are formatted and printed.
 12. State chart diagram for an order object.

PRACTICAL EXERCISES FOR BCA-P3 (LAB-3)

C++ OBJECT ORIENTED PROGRAMMING

1. Write a C++ program to calculate average marks scored by a student for 3 subjects.
2. Write a C++ program to find the area and perimeter of a circle and rectangle.
3. Write a C++ program to swap two numbers.
4. Write a C++ program to find largest of three numbers.
5. Write a C++ program to find the maximum number among three numbers.
6. Write a C++ program to generate Fibonacci series.
7. Write a C++ program to perform string manipulation.
8. Find the length of a string. Compare two strings, Concatenate two strings, Reverse a string, Copy a string to another location.
9. Write a C++ program to find quotient and remainder of 2 numbers.
10. Write a C++ program to manipulate the class account using classes and function. A user should be able to perform the following functions. a. Deposit money. b. Withdraw money, c. Calculate the interest d. Check the total balance in his account.
11. Write a C++ program to generate Prime numbers between 1 and 50.
12. Write a C++ program to perform matrix addition and multiplication.
13. Write a C++ program to check whether the given matrix is a sparse matrix or not.
14. Write a C++ program to overload unary minus operator.
15. Write a C++ program to calculate total sales and average sales made by a salesman.
16. Write a C++ program to for construction in Derived Class to produce the report a employee in a company.
17. Write a C++ program to display the student details using pointers.
18. Write a C++ program to convert ASCII value to its equivalent character.
19. Write a C++ program to overload a function to calculate volume of cube, cylinder and rectangular box.
20. Write a C++ program to create a class template to find the maximum of two numbers.

INTERNET PROGRAMMING, JAVA/ActiveX)

1. Converting Temperature in Fahrenheit into Temperature in Celsius.
2. Program for student Mark-List preparation
3. Program for reverse and finding sum of individual digits of a given number
4. Program to generate Fibonacci series
5. Program for finding Factorial of a given number
6. Program for find whether a given number is prime or not.
7. Program for sorting the given numbers in Ascending and Descending order.
8. Program for Matrix Multiplication
9. Program for finding roots of the given quadratic equation
10. Program for finding volume of a sphere (Concept: Class and Object)
11. Program for preparing Employee salary Report (Concept : Array of Objects)
12. Program for implementing stack Operations (Concept : Constructor)
13. Program for checking whether a given number is palindrome or not
(Concept : Abstract Class).
14. Program for Electricity charge calculation (Concept : Implementing Multiple Inheritance).
15. Program to find area of Triangle and Rectangle (Concept : Package , Interface).
16. Program for queue implementation (Concept : Exception Handling; User defined Exception).
17. Program to implement Multi- Threading (Concept: Multi- Threading by extending Thread class).
18. Program for simple Railway Reservation System (Concept : IO Streams: DataInput Stream & DataOutputStream).
19. Program to display graphical components (Concept : Graphics class)
20. Program to display an image (Concept : Pixel Grabber Class : Getting pixels of an image)