Time: - 3 Hours]   **[Marks: - 100**

Q.1.   Data Structure

A) Write menu driven program using 'C' for Binary Search Tree. The menu includes
- Create a Binary Search Tree
- Insert element in a Binary Search Tree
- Display

[20 M]

B) Write a 'C' program to evaluate a given polynomial using function. (Use array).
[10 M]

Q.2   Write a PHP script for the following: Design a form to accept a string. Write a function to count the total number of vowels (a,e,i,o,u) from the string. Show the occurrences of each vowel from the string. Check whether the given string is a palindrome or not, without using built-in function. (Use radio buttons and the concept of function. Use 'include' construct or require stmt.)   [25 M]

OR

Write an AngularJS script to display list of games stored in an array on click of button using ng-click. And also Demonstrate ng-init, ng-bing directive of AngularJS.
[25 M]

Q.3   Write an R program to find the maximum and the minimum value of a given vector.
[25 M]

OR

Write an ethereum application in JavaScript for smart contracts.
[25 M]

Q.4   Viva   [10 M]

Q.5   Lab Book   [10 M]

Savitribai Phule Pune University
S.Y.B.B.A.(C.A.) Semester - III University Practical Examination. Oct/Nov 2020
Lab Course: (CA-306) Computer Laboratory Based on 302, 304 and 305
Data Structure, Angular JS / PHP, Big Data / Block Chain

Time: - 3 Hours]   **[Marks: - 100**

Q.1.   Data Structure

   A) Write a 'C' program to accept a string from user and reverse it using Static implementation of Stack.

   [20 M]

   B) Write a 'C' program to create Circularly Doubly Linked list and display it.
   [10 M]

Q.2   Write a PHP script for the following: Design a form to accept two strings from the user. Find the first occurrence and the last occurrence of the small string in the large string. Also count the total number of occurrences of small string in the large string. Provide a text box to accept a string, which will replace the small string in the large string. (Use built-in functions)   [25 M]

OR

   Write a HTML code using AngularJS to generate the following output
           Undergraduate Courses (hint : use ng-repeat, ng-init directive)
                   i. BBA(CA)
                   ii. BCA(Science)
                   iii. B.Sc.(Computer Science)
            Post Graduate Courses
                   i. M.Sc.(Computer Science)
                   ii. M.Sc.(CA)
                   iii. MCA   [25 M]

Q.3   Write an R program to sort a Vector in ascending and descending order.   [25 M]

OR

   Write a blockchain application in JavaScript to calculate hash code for the transaction.

   [25 M]

Q.4   Viva   [10 M]

Q.5   Lab Book   [10 M]

Time: - 3 Hours] **[Marks: - 100**

Q.1. Data Structure

A)Write a program to create two singly linked list of elements of type integer and find the union of the linked lists. (Accept elements in the sorted order)

[20 M]

B) Write a 'C' program to read the adjacency matrix of directed graph and convert it into adjacency list.

[10 M]

Q.2 Write a PHP script for the following: Design a form to accept two numbers from the user. Give options to choose the arithmetic operation (use radio buttons). Display the result on the next form. (Use the concept of function and default parameters. Use 'include' construct or require stmt). [25 M]

OR

Using AngularJS display the 10 student details in Table format (using ng-repeat directive use Array to store data) [25 M]

Q.3 Write an R program to compare two data frames to find the elements in first data frame that are not present in second data frame. [25 M]

OR

Write a blockchain application in JavaScript for the implementation of SHA256 () function. [25 M]

Q.4 Viva [10 M]

Q.5 Lab Book [10 M]

Time: - 3 Hours]   **[Marks: - 100**

Q.1.   Data Structure

A) Write menu driven program using 'C' for Binary Search Tree. The menu includes
-   Create a Binary Search Tree
-   Traverse it by using Inorder and Postorder traversing technique

[20 M]

B) Write a 'C' program to accept two polynomial and find the addition of accepted polynomials.(use array)

[10 M]

Q.2   Write a PHP script for the following: Design a form to accept two strings from the user. Find whether the small string appears at the start of the large string. Provide a text box to accept the string that will replace all occurrences of small string present in the large string. Also split the large string into separate words. (Use regular expressions)

[25 M]

OR

Write an AngularJS script to print details of bank (bank name, MICR code, IFC code, address etc.) in tabular form using ng-repeat   [25 M]

Q.3   Write an R program to extract first 10 English letter in lower case and last 10 letters in upper case and extract letters between 22nd to 24th letters in upper case.   [25 M]

OR

Write a blockchain application in JavaScript for the creation of Transaction block for the account holder.   [25 M]

Q.4   Viva   [10 M]

Q.5   Lab Book   [10 M]

S.Y.B.B.A.(C.A.) Semester - III University Practical Examination. Oct/Nov 2020
Lab Course: (CA-306) Computer Laboratory Based on 302, 304 and 305
Data Structure, Angular JS / PHP, Big Data / Block Chain

Time: - 3 Hours]   **[Marks: - 100**

Q.1. Data Structure

    A)Write menu driven program using 'C' for Binary Search Tree. The menu includes
-    Create a Binary Search Tree
-    Traverse it by using Inorder and Preorder traversing technique

                                                     [20 M]

    B) Write a 'C' program to create linked list with given number in which data part of each node contains individual digit of the number.
(Ex. Suppose the number is 368 then the nodes of linked list should contain 3, 6, 8)
                                                     [10 M]

Q.2   Write a PHP script for the following: Design a form to accept the details of 5 different items, such as item code, item name, units sold, rate. Display the bill in the tabular format. Use only 4 text boxes. (Hint : Use of explode function.)   [25 M]

                                            OR

    Write an AngularJS script for addition of two numbers using ng-init, ng-model & ng-bind. And also Demonstrate ng-show, ng-disabled, ng-click directives on button component.   [25 M]

Q.3   Write an R program to find Sum, Mean and Product of a Vector.   [25 M]

                                              OR

    Write a blockchain application in JavaScript for the simple transaction.   [25 M]

Q.4   Viva   [10 M]

Q.5   Lab Book   [10 M]

Savitribai Phule Pune University
S.Y.B.B.A.(C.A.) Semester - III University Practical Examination. Oct/Nov 2020
Lab Course: (CA-306) Computer Laboratory Based on 302, 304 and 305
Data Structure, Angular JS / PHP, Big Data / Block Chain

Time: - 3 Hours] **[Marks: - 100**

Q.1.   Data Structure

A) Write menu driven program using 'C' for Binary Search Tree. The menu includes
  - Create a Binary Search Tree
  - Traverse it by using Preorder and Postorder traversing technique
[20 M]

B) Write a 'C' program to accept and sort n elements in ascending order by using bubble sort.
[10 M]

Q.2   Write a PHP script for the following: Design a form to accept two strings. Compare the two strings using both methods (= = operator &strcmp function). Append second string to the first string. Accept the position from the user; from where the characters from the first string are reversed. (Use radio buttons) [25 M]

OR

Using AngularJS Create a SPA that show Syllabus content of all subjects of SYBBA (CA)(use ng-view) [25 M]

Q.3   Write an R program to create a simple bar plot of five subject's marks. [25 M]

OR

Write a JavaScript code for the implementation of block chain technology.(At least two block). [25 M]

Q.4   Viva [10 M]

Q.5   Lab Book [10 M]

S.Y.B.B.A.(C.A.) Semester - III University Practical Examination. Oct/Nov 2020
Lab Course: (CA-306) Computer Laboratory Based on 302, 304 and 305
Data Structure, Angular JS / PHP, Big Data / Block Chain
Time: - 3 Hours] **[Marks: - 100**

Q.1. Data Structure

A) Write menu driven program using 'C' for Binary Search Tree. The menu includes
- Create a Binary Search Tree
- Display
- Delete a given element from Binary Search Tree

[20 M]

B) Write a 'C' program to create a singly linked list and count total number of nodes in it and display the list and total number of Nodes.

[10 M]

Q.2 Write a menu driven PHP program to perform the following operations on an associative array:
i. Display the elements of an array along with the keys.
ii. Display the size of an array
iii. Delete an element from an array from the given index.
iv. Reverse the order of each element's key-value pair.[Hint: use array_flip()]
v. Traverse the elements in an array in random order [[Hint: use shuffle()].

[25 M]

OR

Using AngularJS Create a SPA that show Syllabus content of all subjects of SYBBA (CA)(use ng-view) [25 M]

Q.3 Write an R program to create a Dataframes which contain details of 5 employees and display the details in ascending order. [25 M]

OR

Write a blockchain application in JavaScript to transfer crypto currency from one account to another account. [25 M]

Q.4 Viva [10 M]

Q.5 Lab Book [10 M]

Time: - 3 Hours]   **[Marks: - 100**

Q.1. Data Structure

    A) Write menu driven program using 'C' for Binary Search Tree. The menu includes
- Create a Binary Search Tree
- Display
- Search the element in Binary Search Tree

                                                            [20 M]

    B) Write a 'C' program to accept and sort n elements in ascending order by using insertion sort.

                                                            [10 M]

Q.2   Write a menu driven PHP program to perform the following operations on associative arrays:
        a) Sort the array by values (changing the keys) in ascending, descending order.
        b) Also sort the array by values without changing the keys.
        c) Filter the odd elements from an array.
        d) Sort the different arrays at a glance using single function.
        e) Merge the given arrays.
        f) Find the Union, intersection& set difference of two arrays.   **[25 M]**
                                      OR

    Create an HTML form using AngularJS that contain the Student Registration details and validate Student first and last name as it should not contain other than alphabets and age should be between 18 to 50 and display greeting message depending on current time using ng-show (e.g. Good Morning, Good Afternoon, etc.)(use AJAX).

                                            [25 M]

Q.3   Write an R program to create a data frame using two given vectors and display the duplicated elements and unique rows of the said data frame.   **[25 M]**

                                      OR

    Write a blockchain application in JavaScript to create bitcoin wallet.   **[25 M]**

Q.4   Viva   **[10 M]**

Q.5   Lab Book   **[10 M]**

Time: - 3 Hours]   **[Marks: - 100**

Q.1.   Data Structure

A) Write a program to accept a postfix expression and evaluate the expression using the stack.
         Example: Input: ab+cd-*
         Values: a=4, b=2, c=5, d=3
         Answer: 12

                                                            [20 M]

B) Write a 'C' program to create a singly linked list, reverse it and display both the list.   [10 M]

Q.2   Write PHP script to define an interface which has methods area(), volume(). Define constant PI. Create a class cylinder which implements this interface and calculate area and volume.   [25M]

<div align="center">OR</div>

Create an HTML form using AngularJS that contain the Employee Registration details and validate DOB, Joining Date, and Salary and also create a simple arithmetic calculator using radio buttons (use ng-switch, ng-switch-when)   [25 M]

Q.3   Write an R program to change the first level of a factor with another level of a given factor.   [25 M]

<div align="center">OR</div>

Write a blockchain application in JavaScript for the generation of bitcoin after completion of transaction.   [25 M]

Q.4   Viva   [10 M]

Q.5   Lab Book   [10 M]

Time: - 3 Hours]   **[Marks: - 100**

Q.1.   Data Structure

A) Write a 'C' program to read 'n' integers and store them in a Binary search tree and display the nodes level wise.

[20 M]

B) Write a 'C' program to sort randomly generated array elements using Insertion sort method. (Use Random Function)

[10 M]

Q.2   Write class declarations and member function definitions for an employee(code, name, designation). Design derived classes as emp_account(account_no, joining_date) from employee and emp_sal(basic_pay, earnings, deduction) from emp_account. Write a menu driven PHP program a) to build a master table b) to sort all entries c) to search an entry d) Display salary.   [25 M]

OR

Using AngularJS Create a SPA that show address and contact details of Some 5-10 top Hotels which are in pune location.(use ng-view)   [25 M]

Q.3   Write a script in R to create a list of cities and perform the following
1) Give names to the elements in the list.
2) Add an element at the end of the list.
3) Remove the last element.
4) Update the 3rd Element   [25 M]
OR

Write a decentralized block chain application in JavaScript for the bank transaction system.   [25 M]

Q.4   Viva   [10 M]

Q.5   Lab Book   [10 M]

S.Y.B.B.A.(C.A.) Semester - III University Practical Examination. Oct/Nov 2020
Lab Course: (CA-306) Computer Laboratory Based on 302, 304 and 305
Data Structure, Angular JS / PHP, Big Data / Block Chain

Time: - 3 Hours]   **[Marks: - 100**

Q.1.   Data Structure

A) Write a menu driven program using 'C' for singly linked list-
- To create linked list.
- To display linked list
- To search node in linked list.
- Insert at last position

[20 M]

B) Write a menu driven program using 'C' for Dynamic implementation of Queue for integers. The menu includes
- Insert
- Delete
- Display
- Exit

[10 M]

Q.2   Derive a class square from class Rectangle. Create one more class circle. Create an interface with only one method called area(). Implement this interface in all the classes. Include appropriate data members and constructors in all classes. Write a PHP program to accept details of a square, circle and rectangle and display the area.

[25 M]

OR

Using AngularJS Create a SPA that show History of some(4-8) Historical Places (use MVC).   [25 M]

Q.3   Write a script in R to create two vectors of different lengths and give these vectors as input to array and print addition and subtraction of those matrices.   [25 M]

OR

Write a blockchain application in JavaScript using bitcoin technology for the implementation of P2P Payment gateway.   [25 M]

Q.4   Viva   [10 M]

Q.5   Lab Book   [10 M]

S.Y.B.B.A.(C.A.) Semester - III University Practical Examination. Oct/Nov 2020
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Time: - 3 Hours]   **[Marks: - 100**

Q.1.   Data Structure

        A) Write a C program that accepts the graph as an adjacency matrix and checks if the graph is undirected. The matrix for undirected graph is symmetric. Also calculate in degree of all vertices
                -    Read a graph as adjacency Matrix
                -    Check the matrix is symmetric or not
                -    Calculate indegree of all vertices

                                                                                        [20 M]

        B) Write a 'C' program to accept and sort n elements in ascending order using Selection sort method.

                                                                                        [10 M]

Q.2   Write PHP Script to create a class account (accno,cust_name). Derive two classes from account as saving_acc(balance, min_amount) and current_acc(balance, min_amount). Display a menu a) Saving Account b) Current Account For each of this display a menu with the following options. 1. Create account 2. Deposit 3. Withdrawal
                                                        [25 M]

                                                OR

        Using AngularJS Create a SPA for customer registration visiting a departmental store. Form should consists of fields such as name, contact no., gender, favourite item(to be selected from a list of items with Quantity) and suggestions. Display the Bill with total no of items selected and total amount to be paid.(use filter)

                                                                                        [25 M]

Q.3   Write an R Program to calculate Multiplication Table   [25 M]

                                                OR

        Write an ethereum application in JavaScript to transfer currency from one account to another account.   [25 M]

Q.4   Viva   [10 M]

Q.5   Lab Book   [10 M]

S.Y.B.B.A.(C.A.) Semester - III University Practical Examination. Oct/Nov 2020
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Data Structure, Angular JS / PHP, Big Data / Block Chain
Time: - 3 Hours]   **[Marks: - 100**

Q.1.   Data Structure

      A) Write a C program to accept an infix expression and convert it into postfix form.(Use Static Implementation of Stack)
      Example: - A * B + C as AB*C+

                                                                               [20 M]

      B) Write a 'C' program to create doubly link list and display nodes having odd value
                                                                                           [10 M]

Q.2   Implement calculator to convert distances between (both ways) miles and kilometres. One mile is about 1.609 kilometres. User interface (distance.html) has one text-input, two radio-buttons, submit and reset -buttons. Values are posted to PHP-script (distance.php) which calculates the conversions according the user input.   [25 M]

                                                              OR

    Using AngularJS create a SPA that accept the details of student and display mark sheet (roll_ no, student_ name, class, sub1, sub2, sub3, total, percentage, grade)
                                                                [25 M]

Q.3   Consider the inbuilt iris dataset

    i) Create a variable "y" and attach to it the output attribute of the "iris" dataset.

    ii) Create a barplot to breakdown your output attribute.

    iii) Create a density plot matrix for each attribute by class value.   [25 M]

                                                              OR

    Write a blockchain application in JavaScript using bitcoin technology for the implementation of double spending.   [25 M]

Q.4   Viva   [10 M]

Q.5   Lab Book   [10 M]

Savitribai Phule Pune University
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Time: - 3 Hours]   **[Marks: - 100**

Q.1.   Data Structure

A) Write a 'C' program to accept a string from user and reverse it using Dynamic implementation of Stack.

[20 M]

B)Write a 'C' program to accept names from the user and sort in alphabetical order using bubble sort
- Accept n name
- Bubble sort Function
- Display

[10 M]

Q.2   Using regular expressions check for the validity of entered email-id. The @ symbol should not appear more than once. The dot (.) can appear at the most once before @ and at the most twice or at least once after @ symbol. The substring before @ should not begin with a digit or underscore or dot or @ or any other special character. (Use explode and ereg function.).   [25 M]

OR

Using AngularJS Create a SPA to take the information of a customer for booking a plan consisting of fields such as name, address, contact no., gender, Date of booking, date of journey, no of passenger, name of passenger etc. Display the e –Ticket.

[25 M]

Q.3   Write an R program to concatenate two given factor in a single factor and display in descending order.   [25 M]

OR

Write an ethereum application in JavaScript for the implementation of blockchain technology.   [25 M]

Q.4   Viva   [10 M]

Q.5   Lab Book   [10 M]

S.Y.B.B.A.(C.A.) Semester - III University Practical Examination. Oct/Nov 2020
Lab Course: (CA-306) Computer Laboratory Based on 302, 304 and 305
Data Structure, Angular JS / PHP, Big Data / Block Chain

Time: - 3 Hours]   **[Marks: - 100**

Q.1.   Data Structure

A) Write a 'C' program to accept an infix expression, convert it into its equivalent postfix expression and display the result.(Use Dynamic Implementation of Stack)
                                                                                                        [20 M]

B)Write menu driven program using 'C' for Dynamic implementation of Stack. The menu includes following operations:
-   Push
-   Pop
-   Display
-   Exit

                                                                                                        [10 M]

Q.2   Write PHP program to create input form for Grocery that displays List of grocery items with checkboxes and create a bill according to list of items selected after clicking submit button.   [25 M]

OR

Using AngularJS Create a SPA for Bus Ticket Reservation consisting of fields : Name, Address, contact   no, source station(Dropdown list), Destination station, Date of booking, date of journey, no of passenger, name of passenger, gender of passenger etc. Display the e –Ticket.   [25 M]

Q.3   Write an R program to extract the five of the levels of factor created from a random sample from the LETTERS   [25 M]

OR

Write a blockchain application in JavaScript to create a block by using hyperledger fabric.   [25 M]

Q.4   Viva   [10 M]

Q.5   Lab Book   [10 M]

Savitribai Phule Pune University
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Time: - 3 Hours] **[Marks: - 100**

Q.1.   Data Structure

A) Write a 'C' program which accept the string and reverse each word of the string using Static implementation of stack.
Example: Input - This is an input string
        Output - sihTsinatupnignirts

[20 M]

B) Write a 'C' program to create to a Singly linked list. Accept the number from user, search the number in the list.If the number is present display the Position of node .If number not present print the message "Number not Found". [10 M]

Q.2   Write a PHP program that accept customer name, consumer number and number of electricity units consumed from an input form and print electricity bill from following data

- For first 50 units – Rs. 3.50/unit
- For next 100 units – Rs. 4.00/unit
- For next 100 units – Rs. 5.20/unit
- For units above 250 – Rs. 6.50/unit
- Fixed meter and service charge- Rs. 150/-   [25 M]

OR

Using AngularJS display the student details who are live in pune in Table format (using ng-repeat directive, use Array to store data, use filter) [25 M]

Q.3   Consider the inbuilt mtcar dataset
i) Subset the vector, "mtcars[,1]", for values greater than "15.0".
ii) Subset "airquality" for "Ozone" greater than "28", or "Temp" greater than "70". Return the first five rows.
iii) Subset "airquality" for "Ozone" greater than "100". Select the columns "Ozone", "Temp", "Month" and "Day" only. [25 M]
OR

Write an ethereum application in JavaScript for HELLO World contract. [25 M]

Q.4   Viva   [10 M]

Q.5   Lab Book   [10 M]

S.Y.B.B.A.(C.A.) Semester - III University Practical Examination. Oct/Nov 2020
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Time: - 3 Hours]   **[Marks: - 100**

Q.1.   Data Structure

A) Write a 'C' program to read a postfix expression, evaluate it and display the result. (Use Static Implementation of Stack).

[20 M]

B) Write a 'C' program to accept the names of cities and store them in array. Accept the city name from user and use linear search algorithm to check whether the city is present in array or not.   [10 M]

Q.2   Write a PHP program for course registration of Learner in an institute that accept Name, Course to be admitted, Mobile number using input form validation such as Name should be only string of character, mobile number should contain digits with valid length and so on. and give feedback to Learner with registration details including registration number.   [25 M]

OR

Write an AngularJS script to search student name according to the character typed and display details(use array and filter).   [25 M]

Q.3   Write an R Program to calculate Decimal into binary of a given number.   [25 M]

OR

Write a blockchain application in JavaScript to calculate hash code for the transaction.

[25 M]

Q.4   Viva   [10 M]

Q.5   Lab Book   [10 M]

S.Y.B.B.A.(C.A.) Semester - III University Practical Examination. Oct/Nov 2020
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Time: - 3 Hours]   **[Marks: - 100**

Q.1.   Data Structure

A) Write a 'C' program to read 'n' integers and store them in a binary Search tree structure and count the following and display it.
- Number of nodes
- Degree of tree
- Leaf nodes

[20 M]

B) Write a 'C' program to accept and sort n elements in ascending order using Merge sort method.   [10 M]

Q.2   Write a PHP script to create a login form with a username and password. Once the user logs in, the second form should be displayed to accept user details (name, city, phoneno). If the user doesn't enter information within a specified time limit, expire his session and give a warning.   [25 M]

OR

Using AngularJS create a SPA that shows Teacher Profile who are teaching SYBBA (CA) with photo.   [25 M]

Q.3   Write an R program to create three vectors a,b,c with 3 integers. Combine the three vectors to become a 3×3 matrix where each column represents a vector. Print the content of the matrix.   [25 M]

OR

Write a blockchain application in JavaScript to transfer crypto currency from one account to another account.   [25 M]

Q.4   Viva   [10 M]

Q.5   Lab Book   [10 M]

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Time: - 3 Hours]   **[Marks: - 100**

Q.1.   Data Structure

      A) Write a 'C' program which accept the string and reverse each word of the string using Dynamic implementation of stack.
      Example: Input - This is an input string
             Output - sihTsinatupnignirts

                                              [20 M]

      B) Write a 'C' program to create a singly Link list and display its alternative nodes. (start displaying from first node)   [10 M]

Q.2   Write a PHP script to keep track of number of times the web page has been accessed.
                                              [25 M]

OR

      Using AngularJS display the Employee details order by salary in Table format (using ng-repeat directive, use Array to store data, use filter)   [25 M]

Q.3   Write an R program to draw an empty plot and an empty plot specify the axes limits of the graphic.   [25 M]

OR

      Write a blockchain application in JavaScript for the creation of Transaction block for the account holder.   [25 M]

Q.4   Viva   [10 M]

Q.5   Lab Book   [10 M]

Time: - 3 Hours]   **[Marks: - 100**

Q.1.   Data Structure

A) Write a 'C' program which accept the string and check whether the string is Palindrome or not using stack. (Use Static/Dynamic implementation of Stack)

[20 M]

B) Write a 'C' program to swap mth and nth element of singly linked list.

[10 M]

Q.2   Write a PHP script to change the preferences of your web page like font style, font size, font color, background color using cookie. Display selected settings on next web page and actual implementation (with new settings) on third web page.   [25 M]

OR

Using AngularJS create a SPA that to accept the details such as name, mobile number, pin-code and email address and make validation. Name should contain character only, mobile number should contain only 10 digit, Pin code should contain only 6 digit, email id should contain only one @, . Symbol   [25 M]

Q.3   Consider Weather dataset
                i) Selecting using the column number
                ii) Selecting using the column name
                iii) Make a scatter plot to compare Wind speed and temperature   [25 M]
                                OR

Write a decentralized block chain application in JavaScript for the bank transaction system.   [25 M]

Q.4   Viva   [10 M]

Q.5   Lab Book   [10 M]

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Time: - 3 Hours]   **[Marks: - 100**

Q.1.   Data Structure

A) Write a 'C' program to read an adjacency matrix of a directed graph and traverse using BFS.

[20 M]

B) Write a 'C' program Accept n elements from user store it in an array. Accept a value from the user and use linear/Sequential search method to check whether the value is present in array or not. Display proper message.

[10 M]

Q.2   Write a PHP script to create a form to accept student information (name, class, address). Once the student information is accepted, accept marks in next form (Phy, Bio, Chem, Maths, Marathi, English).Display the mark sheet for the student in the next form containing name, class, marks of the subject, total and percentage.[25 M]

OR

Using AngularJS create a SPA that to accept the details of doctor(5-6) having field's dno, dname, address, and phone number. Display those in table format. (use MVC.)
[25 M]

Q.3   Consider the plantGrowth inbuilt dataset
 i) Create a variable "y" and attach to it the output attribute of the "plantGrowth" dataset.
 ii) Create a barplot to breakdown your output attribute.
 iii) Create a density plot matrix for each attribute by class value.

[25 M]

OR

Write a JavaScript code for the implementation of block chain technology.(At least two block).   [25 M]

Q.4   Viva   [10 M]

Q.5   Lab Book   [10 M]

Time: - 3 Hours]   [Marks: - 100

Q.1. Data Structure

A) Write a 'C' program which accept an Expression and check whether the expression is Parenthesized or not using stack. (Use Static/Dynamic implementation of Stack)

[20 M]

B) Write a 'C' program to count all non-zero elements, odd numbers and even numbers in the singly linked list.

[10 M]

Q.2   Write a PHP program to create a shopping mall UI. User must be allowed to do purchase from two pages. Each page should have a page total. The third page should display a bill, which consists of a page total of whatever the purchase has been done and print the total. (Use http session tracking).   [25 M]

OR

Using AngularJS create a SPA that accept Voters details and check proper validation for (name, age, and nationality) as Name should be in upper case letters, Age should not be less than 18 yrs and Nationality should be Indian.   [25 M]

Q.3   Write an R program to print the numbers from 1 to 100 and print "SY" for multiples of 3, print "BBA" for multiples of 5, and print "SYBBA" for multiples of both.

[25 M]

OR

Write an ethereum application in JavaScript for the implementation of blockchain technology.   [25 M]

Q.4   Viva   [10 M]

Q.5   Lab Book   [10 M]

Time: - 3 Hours]   **[Marks: - 100**

Q.1.   Data Structure

        A) Write a menu driven program using 'C' for singly linked list-
-    To create linked list.
-    To display linked list
-    To insert node at last position of linked list.
-    To delete node from specific position of linked list.

                                                              [20 M]

        B) Write a 'C' program to create a random array of n integers. Accept a value x from user and use Binary search algorithm to check whether the number is present in array or not.
        (Students can accept sorted array or can use any sorting method to sort the array)
                                                             [10 M]

Q.2   Write a PHP script to create a form to accept customer information (name, address, ph-no). Once the customer information is accepted, accept product information in the next form (Product name, qty, rate). Display the bill for the customer in the next form. Bill should contain the customer information and the information of the products entered.
                                                           [25 M]

                                                OR

        Using AngularJS create a SPA to carry out validation for a username entered in textbox. If the textbox is blank, alert 'Enter username'. If the number of characters is less than three, alert ' Username is too short'. If value entered is appropriate the print 'Valid username' and password should be minimum 8 characters.   [25 M]

Q.3   Write a script in R to create two vectors of different lengths and give these vectors as input to array and print second row of second matrix of the array.   [25 M]

                                                  OR

        Write a blockchain application in JavaScript to create a block by using hyperledger fabric.   [25 M]

Q.4   Viva   [10 M]

Q.5   Lab Book   [10 M]

Time: - 3 Hours]   **[Marks: - 100**

Q.1. Data Structure

A) Write a 'C' program to read a postfix expression, evaluate it and display the result.
(Use Dynamic Implementation of Stack)

[20 M]

B) Write a 'C' program to remove last node of the singly linked list and insert it at the
beginning of list.   [10 M]

Q.2 Write a PHP script to accept username and password. If in the first three chances,
username and password entered is correct, then display second form, otherwise
display error message.   [25 M]

OR

Using AngularJS create a SPA to fetch suggestions when is user is typing in a textbox.
(eg like google suggestions. Hint create array of suggestions and matching string will
be displayed).   [25 M]

Q.3 Write a script in R to create two vectors of different lengths and give these vectors as
input to array and print Multiplication of those matrices.   [25 M]

OR

Write an ethereum application in JavaScript for smart contracts.   [25 M]

Q.4 Viva   [10 M]

Q.5 Lab Book   [10 M]

Q.1. Data Structure

S.Y.B.B.A.(C.A.) Semester - III University Practical Examination. Oct/Nov 2020
Lab Course: (CA-306) Computer Laboratory Based on 302, 304 and 305
Data Structure, Angular JS / PHP, Big Data / Block Chain

Time: - 3 Hours]   [Marks: - 100

A) Write a 'C' program to read an adjacency matrix of a directed graph and traverse it using DFS.

[20 M]

B) Write a menu driven program using 'C' for singly linked list-
- To create linked list.
- To display linked list

[10 M]

Q.2   Consider the following entities and their relationships
Emp (emp_no,emp_name,address,phone,salary)
Salary(em_pno, Basic, HR, TA, DA)
Dept (dept_no,dept_name,location)
Emp-Dept are related with one-many relationship Create a RDB for the above and solve following Using above database.
write a PHP script which will print a salary statement for specified emp_no with his details.   [25 M]

OR

Create an HTML form Using AngularJS for Login system and validate email ID using Regular Expression and password should be minimum 8 characters.   [25 M]

Q.3   Write an R program to create a list of elements using vectors, matrices and a functions. Print the content of the list.   [25 M]

OR

Write an ethereum application in JavaScript to transfer currency from one account to another account.   [25 M]

Q.4   Viva   [10 M]

Q.5   Lab Book   [10 M]

Q.1.   Data Structure

Time: - 3 Hours]   **[Marks: - 100**

A) Write a 'C' program to accept an infix expression, convert it into its equivalent prefix expression and display the result. (Use Static Implementation of Stack).

[20 M]

B) Write a 'C' program to create two singly linked lists and concatenate one list at the end of another list.

[10 M]

Q.2   Consider the following entities and their relationships Doctor (doc_no, doc_name, address, city, area) Hospital (hosp_no, hosp_name, hosp_city) Doctor and Hospital are related with many-many relationship. Create a RDB in 3 NF for the above and solve following Using above database, write a PHP script which accepts hospital name and print information about doctors visiting / working in that hospital in tabular format.

[25 M]

OR

Using AngularJS create a SPA for eLearning System.   [25 M]

Q.3   Write a script in R to create an array, passing in a vector of values and a vector of dimensions. Also provide names for each dimension.   [25 M]

OR

Write an ethereum application in JavaScript for HELLO World contract.   [25 M]

Q.4   Viva   [10 M]

Q.5   Lab Book   [10 M]

Q.1.   Data Structure

Time: - 3 Hours]   **[Marks: - 100**

A)Implement Static implementation of circular queue of integers with following operation:
- Initialize(),insert(), delete(), isempty(), isfull(), display()

[20 M]

B) Write a 'C' program to create Doubly Link list and display it.

[10 M]

Q.2   Considerer the following entities and their relationships project(pno integer, p_name char(30), ptype char(20),duration integer), employee (eno integer, e_name char (20), qualification char (15), joindate date) .The relationship between project - employee: M-M, with descriptive attributes as start_date (date), no_of_hours_worked (integer). Using above database write a script in PHP to accept a project name from user and display information of employees working on the project.   [25 M]

OR

Using AngularJS create a SPA for a Recipe Book.   [25 M]

Q.3   Write an R Program to calculate binary into Decimal of a given number.   [25 M]

OR

Write a blockchain application in JavaScript for the implementation of SHA256 () function.   [25 M]

Q.4   Viva   [10 M]

Q.5   Lab Book   [10 M]

Q.1.   Data Structure

Time: - 3 Hours]   **[Marks: - 100**

A) Write a 'C' program to create a Binary Search tree and implements following functions
- Create Binary Search Tree
- Search a node in binary search tree
- Display a binary search tree   (Post order Traversal)

[20 M]

B) Write a 'C' program to read n integers and create two lists such that all positive numbers are in one list and negative numbers are in another list. Display both the lists.

[10 M]

Q.2   Consider the following entities and their relationships
student (sno integer, s_name char(30), s_class char(10), s_addr char(50)),
teacher (tno integer, t_name char (20), qualification char (15),experience integer).
The relationship between student-teacher: m-m with descriptive attribute subject.
Using above database write a script in PHP to accept a teacher name from user and display the names of students along with subjects to whom teacher is teaching.

[25 M]

OR

Using AngularJS create a SPA that clone the "Hacker News" website.   [25 M]

Q.3   Write an R program to convert a given matrix to a list and print list in ascending order.   [25 M]

OR

Write a blockchain application in JavaScript for the simple transaction.   [25 M]

Q.4   Viva   [10 M]

Q.5   Lab Book   [10 M]

Savitribai Phule Pune University
S.Y.B.B.A.(C.A.) Semester - III University Practical Examination. Oct/Nov 2020
Lab Course: (CA-306) Computer Laboratory Based on 302, 304 and 305
Data Structure, Angular JS / PHP, Big Data / Block Chain

Time: - 3 Hours]   **[Marks: - 100**

Q.1.   Data Structure

      A) Write a 'C' program to create a Binary tree, traverse it using recursive operations like inorder, preorder and postorder and display the result of each one separately.
                                                     [20 M]

      B) Write a 'C' program to create Circular Singly Link list and display it.
                                                     [10 M]

Q.2   Consider the following entities and their relationships
         Movie (movie_no, movie_name, release_year)
         Actor (actor_no, name)
    Relationship between movie and actor is many – many with attribute rate in Rs.
    Create a RDB in 3NF for the above and solve following Using above database, write PHP scripts for the following:(Hint: Create HTML form having three radio buttons)
    a) Accept actor name and display the names of the movies in which he has acted.
    b) Insert new movie information.
    c) Update the release year of a movie. (Accept the movie name from user) [25 M]
                                     OR

    Using AngularJS Develop Online School System.   [25 M]

Q.3   Write a script in R to create a list of students and perform the following
    1) Give names to the students in the list.
    2) Add a student at the end of the list.
    3) Remove the firstStudent.
    4) Update the second last student.   [25 M]
                                     OR

    Write a blockchain application in JavaScript using bitcoin technology for the implementation of P2P Payment gateway.   [25 M]

Q.4   Viva   [10 M]

Q.5   Lab Book   [10 M]

Q.1. Data Structure

Time: - 3 Hours]   **[Marks: - 100**

A)Implement Dynamic implementation of circular queue of integers with following operation:
- Initialize(),insert(), delete(), isempty(), isfull(), display()

[20 M]

B) Write a 'C' program to sort elements of a singly linked list in ascending order and display the sorted List.

[10 M]

Q.2   Considerer the following entities and their relationships
Student (Stud_id,name,class)
Competition (c_no,c_name,type)
Relationship between student and competition is many-many with attribute rank and year. Create a RDB in 3NF for the above and solve the following. Using above database write a script in PHP to accept a competition name from user and display information of student who has secured 1st rank in that competition.   [25 M]

OR

Using AngularJS Implement E-commerce Website.   [25 M]

Q.3   Write an R program to sort a list of 10 strings in ascending and descending order.

[25 M]

OR

Write a blockchain application in JavaScript using bitcoin technology for the implementation of double spending.   [25 M]

Q.4   Viva   [10 M]

Q.5   Lab Book   [10 M]