Savitribai Phule Pune University

T.Y. B.C.A (Science)

Semester – V

C.B.C.S 2019 Pattern

BCA356

DSE I Lab

(Programming in Java)

Savitribai Phule Pune University

T.Y. B.C.A. (Science) (Semester-V) Practical Examination

BCA 356: DSE I Lab (Programming in Java)

Duration: 3Hrs. **Max Marks: 35+15=50**

Q1. Write a program to accept a number from user and generate multiplication table of a number. [10 Marks]

Q2. Construct a linked List containing names of colours: red, blue, yellow and orange. Then extend the program to do the following:

i. Display the contents of the List using an Iterator

ii. Display the contents of the List in reverse order using a ListIterator

iii. Create another list containing pink and green. Insert the elements of this list between blue and yellow. [20 Marks]

OR

Q2. Write a JDBC program to display all the details of the Person table in proper format on the screen. Create and insert values in Person table with fields as PID, name, gender, birth_year in PostgreSQL database. [20 Marks]

Q3. Viva [5 Marks]

Q4. Internal Assessment [15 Marks]

Savitribai Phule Pune University

T.Y. B.C.A. (Science) (Semester-V) Practical Examination

BCA 356: DSE I Lab (Programming in Java)

Duration: 3Hrs. **Max Marks: 35+15=50**

Q1. Write a program to accept 'n' integers from the user & store them in an Array List collection. Display the elements of Array List. [10 Marks]

Q2. Define a class MyNumber having one private integer data member. Write a default constructor initialize it to 0 and another constructor to initialize it to a value. Write methods isNegative, isPositive, isOdd, iseven. Use command line argument to pass a value to the object and perform the above operations. [20 Marks]

OR

Q2. Write a program to accept Doctor Name from the user and check whether it is valid or not.(It should not contain digits and special symbol) If it is not valid then throw user defined Exception - Name is Invalid -- otherwise display the name. [20 Marks]

Q3. Viva [5 Marks]

Q4. Internal Assessment [15 Marks]

Savitribai Phule Pune University

T.Y. B.C.A. (Science) (Semester-V) Practical Examination

BCA 356: DSE I Lab (Programming in Java)

Duration: 3Hrs. **Max Marks: 35+15=50**

Q1. Write a program to accept the 'n' different numbers from user and store it in array. Also print the sum of elements of the array. [10 Marks]

Q2. Write a program to create class Account (accno, accname, balance). Create an array of 'n' Account objects. Define static method "sortAccount" which sorts the array on the basis of balance. Display account details in sorted order. [20 Marks]

OR

Q2. Write a program to copy the contents from one file into another file in upper case. [20 Marks]

Q3. Viva [5 Marks]

Q4. Internal Assessment [15 Marks]

Savitribai Phule Pune University

T.Y. B.C.A. (Science) (Semester-V) Practical Examination

BCA 356: DSE I Lab (Programming in Java)

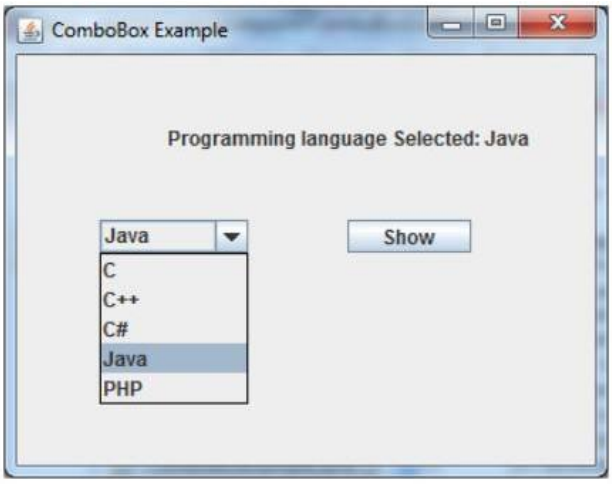
Duration: 3Hrs. **Max Marks: 35+15=50**

Q1. Write a program to accept the user name and greets the user by name. Before displaying the user's name, convert it to upper case letters. For example, if the user's name is Raj, then display greet message as "Hello, RAJ, nice to meet you!". [10 Marks]

Q2. Write a program which define class Product with data member as id, name and price. Store the information of 5 products and Display the name of product having minimum price (Use array of object). [20 Marks]

OR

Q2. Write a program to design following GUI using swing. On click of Show button display the selected Programming language on screen using label. [20 Marks]



Q3. Viva [5 Marks]

Q4. Internal Assessment [15 Marks]

Savitribai Phule Pune University

T.Y. B.C.A. (Science) (Semester-V) Practical Examination

BCA 356: DSE I Lab (Programming in Java)

Duration: 3Hrs. **Max Marks: 35+15=50**

Q1. Write a program to accept a number from the user, if number is zero then throw user defined exception ―Number is 0, otherwise display factorial of a number. [10 Marks]

Q2. Define a "Point" class having members – x,y (coordinates). Define default constructor and parameterized constructors. Define subclass "ColorPoint" with member as color. Write display method to display the details of Point. [20 Marks]

OR

Q2. Write a JDBC program to insert the records into the table Employee (ID, name, salary) using PreparedStatement interface. Accept details of Employees from user. [20 Marks]

Q3. Viva [5 Marks]

Q4. Internal Assessment [15 Marks]

Savitribai Phule Pune University

T.Y. B.C.A. (Science) (Semester-V) Practical Examination

BCA 356: DSE I Lab (Programming in Java)

Duration: 3Hrs. **Max Marks: 35+15=50**

Q1. Accept 'n' integers from the user and store them in a collection. Display them in the sorted order. The collection should not accept duplicate elements. (Use a suitable collection). Search for a particular element using predefined search method in the Collection framework. [10 Marks]

Q2. Write a program which define class Employee with data member as id, name and salary Store the information of 'n' employees and Display the name of employee having maximum salary (Use array of object). [20 Marks]

OR

Q2. Write a program to create the following GUI using Swing components. [20 Marks]

Q3. Viva [5 Marks]

Q4. Internal Assessment [15 Marks]

Savitribai Phule Pune University

T.Y. B.C.A. (Science) (Semester-V) Practical Examination

BCA 356: DSE I Lab (Programming in Java)

Duration: 3Hrs. **Max Marks: 35+15=50**

Q1. Create a Hash table containing Employee name and Salary. Display the details of the hash table. [10 Marks]

Q2. Define a class student having rollno, name and percentage. Define Default and parameterized constructor. Accept the 5 student details and display it. (Use this keyword). [20 Marks]

OR

Q2. Write a program to design the following GUI using Swing components. On click of submit button check whether user has entered all the details or not. If any details are missing then display appropriate message on screen using label. [20 Marks]

Q3. Viva [5 Marks]

Q4. Internal Assessment [15 Marks]

Savitribai Phule Pune University

T.Y. B.C.A. (Science) (Semester-V) Practical Examination

BCA 356: DSE I Lab (Programming in Java)

Duration: 3Hrs. **Max Marks: 35+15=50**

Q1. Write a program to reverse a number. Accept number using command line argument. [10 Marks]

Q2. Define a class MyDate (day, month, year) with methods to accept and display MyDate object. Accept date as dd, mm, yyyy. Throw user defined exception "InvalidDateException" ifthe date is invalid. Examples of invalid dates : 12 15 2015, 31 6 1990, 29 2 2001 [20 Marks]

OR

Q2. Create and insert values to Person table (PID, name, gender, birth_year) in postgreSQL database. Write a JDBC program to display information about the ResultSet like number of columns available in the ResultSet and SQL type of each column using ResultSetMetaData. [20 Marks]

Q3. Viva [5 Marks]

Q4. Internal Assessment [15 Marks]

Savitribai Phule Pune University

T.Y. B.C.A. (Science) (Semester-V) Practical Examination

BCA 356: DSE I Lab (Programming in Java)

Duration: 3Hrs. **Max Marks: 35+15=50**

Q1. Write a program to accept a number from user. Check whether number is perfect or not. Use BufferedReader class for accepting input from user. [10 Marks]

Q2. Define a "Point" class having members – x,y(coordinates). Define default constructor and parameterized constructors. Define subclass "Point3D" with member as z (coordinate). Write display method to show the details of Point. [20 Marks]

OR

Q2. Write a program that displays the number of characters, lines and words of a file. [20 Marks]

Q3. Viva [5 Marks]

Q4. Internal Assessment [15 Marks]

Savitribai Phule Pune University

T.Y. B.C.A. (Science) (Semester-V) Practical Examination

BCA 356: DSE I Lab (Programming in Java)

Duration: 3Hrs. **Max Marks: 35+15=50**

Q1. Write a program to accept a number from user. Check whether number is prime or not. [10 Marks]

Q2. Create a package "utility". Define a class CapitalString under "utility" package which will contain a method to return String with first letter capital. Create a Person class (members – name, city) outside the package. Display the person name with first letter as capital by making use of CapitalString. [20 Marks]

OR

Q2. Define a class SavingAccount (acno, name, balance). Define appropriate operations as, withdraw(), deposit(), and viewbalance(). The minimum balance must be 500. Create an object and perform operation. Raise user defined ―InsufficientFundException when balance is not sufficient for withdraw operation. [20 Marks]

Q3. Viva [5 Marks]

Q4. Internal Assessment [15 Marks]

Savitribai Phule Pune University

T.Y. B.C.A. (Science) (Semester-V) Practical Examination

BCA 356: DSE I Lab (Programming in Java)

Duration: 3Hrs. **Max Marks: 35+15=50**

Q1. Write a program create class as MyDate with dd,mm,yy as data members. Write parameterized constructor. Display the date in dd-mm-yy format. (Use this keyword) [10 Marks]

Q2. Create an abstract class Shape with methods area & volume. Derive a class Sphere (radius). Calculate and display area and volume. [20 Marks]

OR

Q2. Write a program to accept details of 'n' customers (c_id, cname, address, mobile_no) from user and store it in a file using DataOutputStream class. [20 Marks]

Q3. Viva [5 Marks]

Q4. Internal Assessment [15 Marks]

Savitribai Phule Pune University

T.Y. B.C.A. (Science) (Semester-V) Practical Examination

BCA 356: DSE I Lab (Programming in Java)

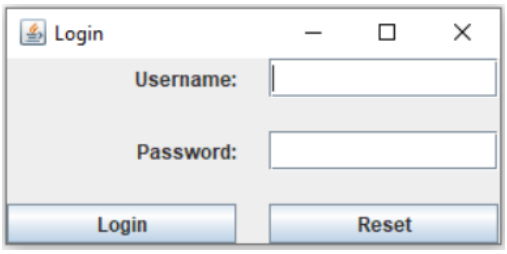
Duration: 3Hrs. **Max Marks: 35+15=50**

Q1. Create a package named "Series" having a class to print series of Square of numbers. Write a program to generate "n" terms series. [10 Marks]

Q2. Create an abstract class Shape with methods area & volume. Derive a class Cylinder (radius, height). Calculate area and volume. [20 Marks]

OR

Q2. Write a program to design a following GUI. Use appropriate Layout and Components. On click of login check whether Username and Password is "admin" or not. [20 Marks]



Q3. Viva [5 Marks]

Q4. Internal Assessment [15 Marks]

Savitribai Phule Pune University

T.Y. B.C.A. (Science) (Semester-V) Practical Examination

BCA 356: DSE I Lab (Programming in Java)

Duration: 3Hrs. **Max Marks: 35+15=50**

Q1. Construct a Linked List having names of Fruits: Apple, Banana, Guava and Orange. Display the contents of the List using an Iterator. [10 Marks]

Q2. Define an interface "Operation" which has methods area(),volume(). Define a constant PI having value 3.142. Create a class circle (member – radius) which implements this interface. Calculate and display the area and volume. [20 Marks]

OR

Q2. Write a class Student with attributes roll no, name, age and course. Initialize values through parameterized constructor. If age of student is not in between 15 and 21 then generate user-defined exception ―Age Not Within The Range. [20 Marks]

Q3. Viva [5 Marks]

Q4. Internal Assessment [15 Marks]

Savitribai Phule Pune University

T.Y. B.C.A. (Science) (Semester-V) Practical Examination

BCA 356: DSE I Lab (Programming in Java)

Duration: 3Hrs. **Max Marks: 35+15=50**

Q1. Write a program to create JDBC connection. On successful connection with database display appropriate message to user. [10 Marks]

Q2. Define an interface "Operation" which has methods area(),volume(). Define a constant PI having a value 3.142. Create a class cylinder (members – radius, height) which implements this interface. Calculate and display the area and volume. [20 Marks]

OR

Q2. Write a class Student with attributes roll no, name, age and course. Initialize values through parameterized constructor. If student's roll no of is not in between 13001 to 13080 thengenerate user- defined exception ―Rollno is Not Within The Range. [20 Marks]

Q3. Viva [5 Marks]

Q4. Internal Assessment [15 Marks]

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T.Y. B.C.A. (Science) (Semester-V) Practical Examination

BCA 356: DSE I Lab (Programming in Java)

Duration: 3Hrs. **Max Marks: 35+15=50**

Q1. Construct a Linked List having names of Fruits: Apple, Banana, Guava and Orange. Display the contents of the List in reverse order using an appropriate interface. [10 Marks]

Q2. Write a program to create a super class Employee (members – name, salary). Derive a sub- class as Developer (member – projectname). Create object of Developer and display the detailsof it. [20 Marks]

OR

Q2. Design a servlet to display message as "Welcome IP address of client" to visitor. [20 Marks]

Q3. Viva [5 Marks]

Q4. Internal Assessment [15 Marks]

Savitribai Phule Pune University

T.Y. B.C.A. (Science) (Semester-V) Practical Examination

BCA 356: DSE I Lab (Programming in Java)

Duration: 3Hrs. **Max Marks: 35+15=50**

Q1. Define a class MyNumber having one private integer data member. Write a parameterized constructor to initialize to a value. Write isEven() to check given number is even or not. Use command line argument to pass a value to the object. [10 Marks]

Q2. Write a program to create a super class Employee (members – name, salary). Derive a sub- class Programmer (member – proglanguage). Create object of Programmer and display the details of it. [20 Marks]

OR

Q2. Write a JDBC program to update number_of_students of "BCA Science" to 1000. Create a table Course (Code,name, department,number_of_students) in PostgreSQL database. Insertvalues in the table.

[20 Marks]

Q3. Viva [5 Marks]

Q4. Internal Assessment [15 Marks]

Savitribai Phule Pune University

T.Y. B.C.A. (Science) (Semester-V) Practical Examination

BCA 356: DSE I Lab (Programming in Java)

Duration: 3Hrs. **Max Marks: 35+15=50**

Q1. Define a class MyNumber having one private integer data member. Write a parameterized constructor to initialize to a value. Write isOdd() to check given number is odd or not. Use command line argument to pass a value to the object. [10 Marks]

Q2. Define a class Student with attributes rollno and name. Define default and parameterized constructor. Keep the count of Objects created. Create objects using parameterized constructor and Display the object count after each object is created. [20 Marks]

OR

Q2. Write a JSP program to perform Arithmetic operations such as Addition and Subtraction. Design a HTML to accept two numbers in text box and radio buttons to display operations. On submit display result as per the selected operation on next page using JSP. [20 Marks]

Q3. Viva [5 Marks]

Q4. Internal Assessment [15 Marks]

Savitribai Phule Pune University

T.Y. B.C.A. (Science) (Semester-V) Practical Examination

BCA 356: DSE I Lab (Programming in Java)

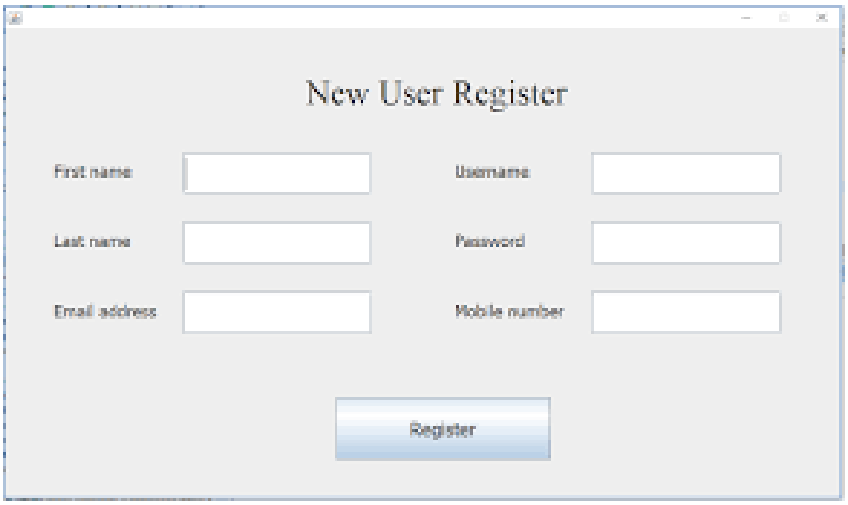
Duration: 3Hrs. **Max Marks: 35+15=50**

Q1. Write a program to print the factors of a number. Accept a number using command line argument. [10 Marks]

Q2. Write a program to read the contents of "abc.txt" file. Display the contents of file in uppercase as output. [20 Marks]

OR

Q2. Write a program to design following screen using swing components [20 Marks]



Q3. Viva [5 Marks]

Q4. Internal Assessment [15 Marks]

Savitribai Phule Pune University

T.Y. B.C.A. (Science) (Semester-V) Practical Examination

BCA 356: DSE I Lab (Programming in Java)

Duration: 3Hrs. **Max Marks: 35+15=50**

Q1. Write a program to accept the 'n' different numbers from user and store it in array. Display maximum number from an array. [10 Marks]

Q2. Create an abstract class “order” having members id, description. Create a subclass “Purchase Order” having member as customer name. Define methods accept and display. Create 3 objects each of Purchase Order. Accept and display the details. [20 Marks]

OR

Q2. Write a servlet program to display current date and time of server. [20 Marks]

Q3. Viva [5 Marks]

Q4. Internal Assessment [15 Marks]

Savitribai Phule Pune University

T.Y. B.C.A. (Science) (Semester-V) Practical Examination

BCA 356: DSE I Lab (Programming in Java)

Duration: 3Hrs. **Max Marks: 35+15=50**

Q1. Write a program to accept 3 numbers using command line argument. Sort and display the numbers. [10 Marks]

Q2. Create an employee class (id,name,deptname,salary). Define a default and parameterized constructor. Use 'this' keyword to initialize instance variables. Keep a count of objects created. Create objects using parameterized constructor and display the object count after each object is created. Also display the contents of each object. [20 Marks]

OR

Q2. Write a JSP program to perform Arithmetic operations such as Multiplication and Divison. Design a HTML to accept two numbers in text box and radio buttons to display operations. On submit display result as per the selected operation on next page using JSP. [20 Marks]

Q3. Viva [5 Marks]

Q4. Internal Assessment [15 Marks]

Savitribai Phule Pune University

T.Y. B.C.A (Science)

Semester – V

C.B.C.S 2019 Pattern

BCA357

DSE II Lab

(Data Mining)

Savitribai Phule Pune University

T.Y. B.C.A. (Science) (Semester-V) Practical Examination

BCA 357: DSE II Lab (Data Mining)

Duration: 3Hrs. **Max Marks: 35+15=50**

Q1.Write a R program to add, multiply and divide two vectors of integertype. (Vector length should be minimum 4) [10 Marks]

Q2.Consider the student data set. It can be downloaded from: https://drive.google.com/open?id=1oakZCv7g3mlmCSdv9J8kdSaqO 5_6dIOw . Write a programme in python to apply simple linear regression and find out mean absolute error, mean squared error and root mean squared error. [20 Marks]

Q3. Viva [5 Marks]

Q4. Internal Assessment [15 Marks]

Savitribai Phule Pune University

T.Y. B.C.A. (Science) (Semester-V) Practical Examination

BCA 357: DSE II Lab (Data Mining)

Duration: 3Hrs. **Max Marks: 35+15=50**

Q1. Write an R program to calculate the multiplication table using afunction. [10 Marks]

Q2. Write a python program to implement k-means algorithms on asynthetic dataset. [20 Marks]

Q3. Viva [5 Marks]

Q4. Internal Assessment [15 Marks]

Savitribai Phule Pune University

T.Y. B.C.A. (Science) (Semester-V) Practical Examination

BCA 357: DSE II Lab (Data Mining)

Duration: 3Hrs. **Max Marks: 35+15=50**

Q1. Write a R program to reverse a number and also calculate the sum ofdigits of that number. [10 Marks]

Q2. Consider the following observations/data. And apply simple linear regression and find out estimated coefficients b0 and b1.(use numpypackage)

x=[0,1,2,3,4,5,6,7,8,9,11,13]

y = ([1, 3, 2, 5, 7, 8, 8, 9, 10, 12,16, 18] [20 Marks]

Q3. Viva [5 Marks]

Q4. Internal Assessment [15 Marks]

Savitribai Phule Pune University

T.Y. B.C.A. (Science) (Semester-V) Practical Examination

BCA 357: DSE II Lab (Data Mining)

Duration: 3Hrs. **Max Marks: 35+15=50**

Q1. Write a R program to calculate the sum of two matrices of given size. [10 Marks]

Q2. Consider following dataset

weather=['Sunny','Sunny','Overcast','Rainy','Rainy','Rainy','Overcast','Sunny','Sunny','Rainy','Sunny','Overcast','Overcast','Rainy']

temp=['Hot','Hot','Hot','Mild','Cool','Cool','Cool','Mild','Cool','Mild','Mild','Mild','Hot','Mild']

play=['No','No','Yes','Yes','Yes','No','Yes','No','Yes','Yes','Yes','Yes','Yes','No'].

Use Naïve Bayes algorithm to predict [0: Overcast, 2: Mild]tuple belongs to which class whether to play the sports or not.

[20 Marks]

Q3. Viva [5 Marks]

Q4. Internal Assessment [15 Marks]

Savitribai Phule Pune University

T.Y. B.C.A. (Science) (Semester-V) Practical Examination

BCA 357: DSE II Lab (Data Mining)

Duration: 3Hrs. **Max Marks: 35+15=50**

Q1. Write a R program to concatenate two given factors. [10 Marks]

Q2. Write a Python program build Decision Tree Classifier using Scikit- learn package for diabetes data set (download database from https://www.kaggle.com/uciml/pima-indians-diabetes-database)

[20 Marks]

Q3. Viva [5 Marks]

Q4. Internal Assessment [15 Marks]

Savitribai Phule Pune University

T.Y. B.C.A. (Science) (Semester-V) Practical Examination

BCA 357: DSE II Lab (Data Mining)

Duration: 3Hrs. **Max Marks: 35+15=50**

Q1. Write a R program to create a data frame using two given vectors and displaythe duplicate elements. [10 Marks]

Q2. Write a python program to implement hierarchical Agglomerative clusteringalgorithm. (Download Customer.csv dataset from github.com). [20 Marks]

Q3. Viva [5 Marks]

Q4. Internal Assessment [15 Marks]

Savitribai Phule Pune University

T.Y. B.C.A. (Science) (Semester-V) Practical Examination

BCA 357: DSE II Lab (Data Mining)

Duration: 3Hrs. **Max Marks: 35+15=50**

Q1. Write a R program to create a sequence of numbers from 20 to 50 and findthe mean of numbers from 20 to 60 and sum of numbers from 51 to 91.

[10 Marks]

Q2. Consider the following observations/data. And apply simple linear regression and find out estimated coefficients b1 and b1 Also analyse theperformance of the model

(Use sklearn package)

x = np.array([1,2,3,4,5,6,7,8])

y = np.array([7,14,15,18,19,21,26,23]) [20 Marks]

Q3. Viva [5 Marks]

Q4. Internal Assessment [15 Marks]

Savitribai Phule Pune University

T.Y. B.C.A. (Science) (Semester-V) Practical Examination

BCA 357: DSE II Lab (Data Mining)

Duration: 3Hrs. **Max Marks: 35+15=50**

Q1. Write a R program to get the first 10 Fibonacci numbers. [10 Marks]

Q2. Write a python program to implement k-means algorithm to build prediction model (Use Credit Card Dataset CC GENERAL.csv Download from kaggle.com) [20 Marks]

Q3. Viva [5 Marks]

Q4. Internal Assessment [15 Marks]

Savitribai Phule Pune University

T.Y. B.C.A. (Science) (Semester-V) Practical Examination

BCA 357: DSE II Lab (Data Mining)

Duration: 3Hrs. **Max Marks: 35+15=50**

Q1. Write an R program to create a Data frames which contain details of 5 employees and display summary of the data. [10 Marks]

Q2. Write a Python program to build an SVM model to Cancer dataset. The dataset is available in the scikit-learn library. Check the accuracyof model with precision and recall. [20 Marks]

Q3. Viva [5 Marks]

Q4. Internal Assessment [15 Marks]

Savitribai Phule Pune University

T.Y. B.C.A. (Science) (Semester-V) Practical Examination

BCA 357: DSE II Lab (Data Mining)

Duration: 3Hrs. **Max Marks: 35+15=50**

Q1. Write a R program to find the maximum and the minimum value of a givenvector [10 Marks]

Q2. Write a Python Programme to read the dataset ("Iris.csv"). dataset download from (https://archive.ics.uci.edu/ml/datasets/iris) and apply Apriori algorithm. [20 Marks]

Q3. Viva [5 Marks]

Q4. Internal Assessment [15 Marks]

Savitribai Phule Pune University

T.Y. B.C.A. (Science) (Semester-V) Practical Examination

BCA 357: DSE II Lab (Data Mining)

Duration: 3Hrs. **Max Marks: 35+15=50**

Q1. Write a R program to find all elements of a given list that are not inanother given list.

```
AB st("x", "y", "z")
   st("X", "Y", "Z", "x", "y", "z")
```

[10 Marks]

Q2. Write a python program to implement hierarchical clustering algorithm.(Download Wholesale customers data dataset from github.com).

[20 Marks]

Q3. Viva [5 Marks]

Q4. Internal Assessment [15 Marks]

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T.Y. B.C.A. (Science) (Semester-V) Practical Examination

BCA 357: DSE II Lab (Data Mining)

Duration: 3Hrs. **Max Marks: 35+15=50**

Q1. Write a R program to create a Dataframes which contain details of 5employees and display the details.

Employee contain (empno,empname,gender,age,designation)

[10 Marks]

Q2. Write a python program to implement multiple Linear Regression modelfor a car dataset. Dataset can be downloaded from:
https://www.w3schools.com/python/python_ml_multiple_regression.asp

[20 Marks]

Q3. Viva [5 Marks]

Q4. Internal Assessment [15 Marks]

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T.Y. B.C.A. (Science) (Semester-V) Practical Examination

BCA 357: DSE II Lab (Data Mining)

Duration: 3Hrs. **Max Marks: 35+15=50**

Q1. Draw a pie chart using R programming for the following datadistribution:

Digits on Dice	1	2	3	4	5	6
Frequency of getting each number	7	2	6	3	4	8

[10 Marks]

Q2. Write a Python program to read "StudentsPerformance.csv" file. Solvefollowing:

- To display the shape of dataset.

- To display the top rows of the dataset with their columns.Note: Download dataset from following link :

(https://www.kaggle.com/spscientist/students-performance-inexams?select=StudentsPerformance.csv) [20 Marks]

Q3. Viva [5 Marks]

Q4. Internal Assessment [15 Marks]

Savitribai Phule Pune University

T.Y. B.C.A. (Science) (Semester-V) Practical Examination

BCA 357: DSE II Lab (Data Mining)

Duration: 3Hrs. **Max Marks: 35+15=50**

Q1. Write a script in R to create a list of employees (name) and perform thefollowing:

a. Display names of employees in the list.

b. Add an employee at the end of the list

c. Remove the third element of the list. [10 Marks]

Q2. Write a Python Programme to apply Apriori algorithm on Groceries dataset. Dataset can be downloaded from (https://github.com/amankharwal/Websitedata/blob/master/Groceries_dataset.csv).

Also display support and confidence for each rule.

[20 Marks]

Q3. Viva [5 Marks]

Q4. Internal Assessment [15 Marks]

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T.Y. B.C.A. (Science) (Semester-V) Practical Examination

BCA 357: DSE II Lab (Data Mining)

Duration: 3Hrs. **Max Marks: 35+15=50**

Q1.Write a R program to add, multiply and divide two vectors of integer type.(vector length should be minimum 4) [10 Marks]

Q2. Write a Python program build Decision Tree Classifier for shows.csvfrom pandas and predict class label for show starring a 40 years old American comedian, with 10 years of experience, and a comedy ranking of 7? Create a csv file as shown in https://www.w3schools.com/python/python_ml_decision_tree.asp

[20 Marks]

Q3. Viva [5 Marks]

Q4. Internal Assessment [15 Marks]

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T.Y. B.C.A. (Science) (Semester-V) Practical Examination

BCA 357: DSE II Lab (Data Mining)

Duration: 3Hrs. **Max Marks: 35+15=50**

Q1. Write a R program to create a simple bar plot of given data

Year	Export	Import
2001	26	35
2002	32	40
2003	35	50

[10 Marks]

Q2. Write a Python program build Decision Tree Classifier using Scikit-learnpackage for diabetes data set (download database from https://www.kaggle.com/uciml/pima-indians-diabetes-database)

[20 Marks]

Q3. Viva [5 Marks]

Q4. Internal Assessment [15 Marks]

Q4. Internal Assessment [15 Marks]

Savitribai Phule Pune University

T.Y. B.C.A. (Science) (Semester-V) Practical Examination

BCA 357: DSE II Lab (Data Mining)

Duration: 3Hrs. **Max Marks: 35+15=50**

Q1. Write a R program to get the first 20 Fibonacci numbers.

[10 Marks]

Q2. Write a python programme to implement multiple linear regression modelfor stock market data frame as follows:

```
Stock_Market = {'Year':
[2017,2017,2017,2017,2017,2017,2017,2017,2017,2017,2017,2016,2
016,20,16,2016,2016,2016,2016,2016,2016,2016,2016,2016],
'Month': [12, 11,10,9,8,7,6,5,4,3,2,1,12,11,10,9,8,7,6,5,4,3,2,1],
'Interest_Rate': [2.75,2.5,2.5,2.5,2.5,2.5,2.5,2.25,2.25,2.25,2,2,2,1.75,1.75,1.75,1.75,1.75,1
.75,1.75,1.75,1.75,1.75,1.75],
'Unemployment_Rate':
[5.3,5.3,5.3,5.3,5.4,5.6,5.5,5.5,5.5,5.6,5.7,5.9,6,5.9,5.8,6.1,6.2,6.1,6.1,6.1,5
.9,6.2,6.2,6.1],

'Stock_Index_Price': [1464,1394,1357,1293,1256,1254,1234,1195,1159,1167,1130,1075,1047,
965,943,958,971,949,884,866,876,822,704,719] }
```

And draw a graph of stock market price verses interest rate.

[20 Marks]

Q3. Viva [5 Marks]

Q4. Internal Assessment [15 Marks]

Savitribai Phule Pune University

T.Y. B.C.A. (Science) (Semester-V) Practical Examination

BCA 357: DSE II Lab (Data Mining)

Duration: 3Hrs. **Max Marks: 35+15=50**

Q1. Write a R program to find the maximum and the minimum value of a givenvector [10 Marks]

Q2. Consider the following observations/data. And apply simple linear regression and find out estimated coefficients b1 and b1 Also analyse theperformance of the model

(Use sklearn package)

x = np.array([1,2,3,4,5,6,7,8])

y = np.array([7,14,15,18,19,21,26,23]) [20 Marks]

Q3. Viva [5 Marks]

Q4. Internal Assessment [15 Marks]

Savitribai Phule Pune University

T.Y. B.C.A. (Science) (Semester-V) Practical Examination

BCA 357: DSE II Lab (Data Mining)

Duration: 3Hrs. **Max Marks: 35+15=50**

Q1. Write a R program to create a Dataframes which contain details of 5 Studentsand display the details.

Students contain (Rollno,Studname,Address,Marks) [10 Marks]

Q2. Write a python program to implement multiple Linear Regression modelfor a car dataset. Dataset can be downloaded from:
https://www.w3schools.com/python/python_ml_multiple_regression.asp
[20 Marks]

Q3. Viva [5 Marks]

Q4. Internal Assessment [15 Marks]

Savitribai Phule Pune University

T.Y. B.C.A. (Science) (Semester-V) Practical Examination

BCA 357: DSE II Lab (Data Mining)

Duration: 3Hrs. **Max Marks: 35+15=50**

Q1. Write a R program to create a data frame from four given vectors. [10 Marks]

Q2. Write a python program to implement hierarchical Agglomerativeclustering algorithm. (Download Customer.csv dataset from github.com). [20 Marks]

Q3. Viva [5 Marks]

Q4. Internal Assessment [15 Marks]

Savitribai Phule Pune University

T.Y. B.C.A (Science)

Semester – V

C.B.C.S 2019 Pattern

BCA358

DSE III Lab

(Operating Systems and AI)

Savitribai Phule Pune University

T.Y. B.C.A. (Science) (Semester-V) Practical Examination

BCA 358: DSE III Lab (Operating Systems and AI)

Duration: 3Hrs. **Max Marks: 35+15=50**

Q.1 Write a program that demonstrates the use of nice() system call. After a child process is started using fork(), assign higher priority to the child using nice() system call. [10 marks]

Q.2 Write the simulation program to implement demand paging and show the page scheduling and total number of page faults for the following given page reference string. Give input n=3 as the number of memory frames.

Reference String :3, 4, 5, 6, 3, 4, 7, 3, 4, 5, 6, 7, 2, 4, 6

Implement FIFO [20 marks]

OR

Write a C program to simulate Banker's algorithm for the purpose of deadlock avoidance. Consider the following snapshot of system, A, B, C and D are the resource type.

	ALLOCATION				MAX			
	A	B	C	D	A	B	C	D
P0	0	0	1	2	0	0	1	2
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

AVAILABLE			
A	B	C	D
1	5	2	0

a) Calculate and display the content of need matrix?

b) Is the system in safe state? If display the safe sequence.

c) If a request from process P arrives for (0, 4, 2, 0) can it be granted immediately by keeping the system in safe state. Print a message [20 marks]

Q3. Viva [5 Marks]

Q4. Internal Assessment [15 Marks]

Savitribai Phule Pune University

T.Y. B.C.A. (Science) (Semester-V) Practical Examination

BCA 358: DSE III Lab (Operating Systems and AI)

Duration: 3Hrs. **Max Marks: 35+15=50**

Q.1 Create a child process using fork(), display parent and child process id. Child process will display the message "Hello World" and the parent process should display "Hi".
[10 marks]

Q.2 Write the simulation program using SJF (non-preemptive). The arrival time and first CPU bursts of different jobs should be input to the system. Assume the fixed I/O waiting time (2 units). The next CPU burst should be generated using random function. The output should give the Gantt chart, Turnaround Time and Waiting time for each process and average times.[20 marks]

OR

Partially implement the Menu driven Banker's algorithm for accepting Allocation, Max from user.

a) Accept Available

b) Display Allocation, Max

c) Find Need and display It,

d) Display Available Consider the system with 3 resources types A,B, and C with 7,2,6 instances respectively.

Consider the following snapshot:

	ALLOCATION	REQUEST	TOTAL RESOURCES
p0	0 1 0	0 0 0	7 2 6
p1	2 0 0	2 0 0	
p2	3 0 3	0 0 1	
p3	2 1 1	1 0 0	
p4	0 0 2	0 0 2	

Answer the following questions:

a) Display the contents of Available array?

b) Is there any deadlock? Print the message [20 marks]

Q3. Viva [5 Marks]

Q4. Internal Assessment [15 Marks]

Savitribai Phule Pune University

T.Y. B.C.A. (Science) (Semester-V) Practical Examination

BCA 358: DSE III Lab (Operating Systems and AI)

Duration: 3Hrs. **Max Marks: 35+15=50**

Q. 1 Creating a child process using the command exec(). Note down process ids of the parent and the child processes, check whether the control is given back to the parent after the child process terminates. [10 marks]

Q.2 Write the simulation program using FCFS. The arrival time and first CPU bursts of different jobs should be input to the system. Assume the fixed I/O waiting time (2 units). The next CPU burst should be generated using random function. The output should give the Gantt chart,Turnaround Time and Waiting time for each process and average times. [20 marks]

OR

Q.2 Given an initial state of a 8-puzzle problem and final state to be reached

2	8	3
1	6	4
7		5

Initial State

1	2	3
8		4
7	6	5

Final State

Find the most cost-effective path to reach the final state from initial state using A* Algorithm in C/Python. [20 marks]

Q3. Viva [5 Marks]

Q4. Internal Assessment [15 Marks]

Savitribai Phule Pune University

T.Y. B.C.A. (Science) (Semester-V) Practical Examination

BCA 358: DSE III Lab (Operating Systems and AI)

Duration: 3Hrs. **Max Marks: 35+15=50**

Q.1 Write a program to illustrate the concept of orphan process (Using fork() and sleep()) [10 marks]

Q.2 Write the program to simulate Non-preemptive Priority scheduling. The arrival time and first CPU burst and priority for different n number of processes should be input to the algorithm. Assume the fixed IO waiting time (2 units). The next CPU-burst should be generated randomly. The output should give Gantt chart, turnaround time and waiting time for each process. Also find the average waiting time and turnaround time.. [20 marks]

OR

Q.2 Write a C program to simulate Banker's algorithm for the purpose of deadlock avoidance. Consider the following snapshot of system, A, B, C and D are the resource type.

	ALLOCATION				MAX			
	A	B	C	D	A	B	C	D
P0	0	0	1	2	0	0	1	2
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

AVAILABLE			
A	B	C	D
1	5	2	0

a) Calculate and display the content of need matrix?

b) Is the system in safe state? If display the safe sequence.

c) If a request from process P arrives for (0, 4, 2, 0) can it be granted immediately by keeping the system in safe state. Print a message [20 marks]

Q3. Viva [5 Marks]

Q4. Internal Assessment [15 Marks]

Savitribai Phule Pune University

T.Y. B.C.A. (Science) (Semester-V) Practical Examination

BCA 358: DSE III Lab (Operating Systems and AI)

Duration: 3Hrs. **Max Marks: 35+15=50**

Q.1 Write a program that demonstrates the use of nice () system call. After a child process is started using fork (), assign higher priority to the child using nice () system call. [10 marks]

Q.2 Write the simulation program to implement demand paging and show the page scheduling and total number of page faults for the following given page reference string. Give input n as the number of memory frames. Reference String: 3, 4, 5, 6, 3, 4, 7, 3, 4, 5, 6, 7, 2, 4, 6

i. Implement FIFO [20 marks]

OR

Q.2 partially implement the Menu driven Banker's algorithm for accepting Allocation, Max from user.

a) Accept Available

b) Display Allocation, Max

c) Find Need and display It,

d) Display Available Consider the system with 3 resources types A,B, and C with 7,2,6 instances respectively.

Consider the following snapshot:

	ALLOCATION	REQUEST	TOTAL RESOURCES
p0	0 1 0	0 0 0	7 2 6
p1	2 0 0	2 0 0	
p2	3 0 3	0 0 1	
p3	2 1 1	1 0 0	
p4	0 0 2	0 0 2	

Answer the following questions:

a) Display the contents of Available array?

b) Is there any deadlock? Print the message [20 marks]

Q3. Viva [5 Marks]

Q4. Internal Assessment [15 Marks]

Savitribai Phule Pune University

T.Y. B.C.A. (Science) (Semester-V) Practical Examination

BCA 358: DSE III Lab (Operating Systems and AI)

Duration: 3Hrs. **Max Marks: 35+15=50**

Q.1 Write a program to find the execution time taken for execution of a given set of instructions (use clock() function) [10 marks]

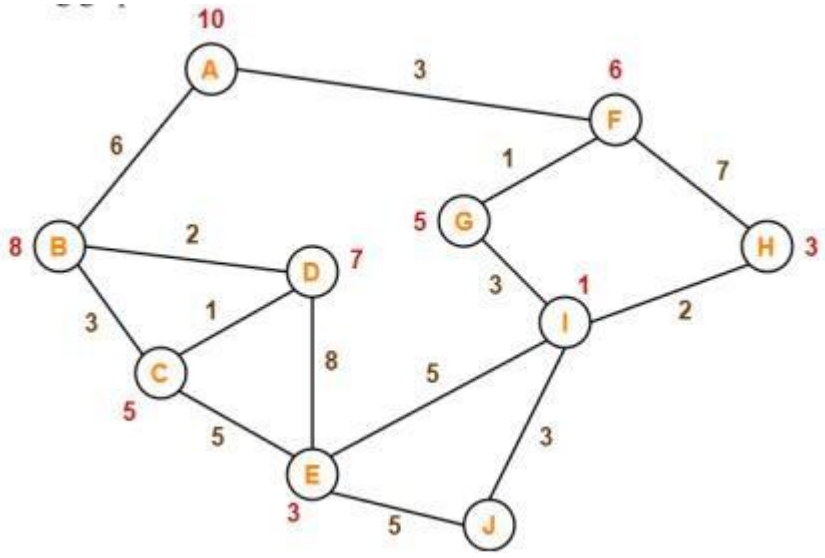
Q.2 Write the simulation program to implement demand paging and show the page scheduling and total number of page faults for the following given page reference string. Give input n as the number of memory frames.

Reference String :3, 4, 5, 6, 3, 4, 7, 3, 4, 5, 6, 7, 2, 4, 6

Implement FIFO [20 marks]

OR

Q.2 Consider the following graph



The numbers written on edges represent the distance between the nodes.

The numbers written on nodes represent the heuristic value.

Implement A* algorithm in C/Python for above graph and find out most cost-effective path from A to J. [20 marks]

Q3. Viva [5 Marks]

Q4. Internal Assessment [15 Marks]

Savitribai Phule Pune University

T.Y. B.C.A. (Science) (Semester-V) Practical Examination

BCA 358: DSE III Lab (Operating Systems and AI)

Duration: 3Hrs. **Max Marks: 35+15=50**

Q.1 Write a program to create a child process using fork().The parent should goto sleep state and child process should begin its execution. In the child process, use execl() to execute the "ls" command. [10 marks]

Q.2 Write the simulation program using FCFS. The arrival time and first CPU bursts of different jobs should be input to the system. Assume the fixed I/O waiting time (2 units). The next CPU burst should be generated using random function. The output should give the Gantt chart, Turnaround Time and Waiting time for each process and average times [20 marks]

OR

Q.2 Write the simulation program to implement demand paging and show the page scheduling and total number of page faults for the following given page reference string. Give input n as the number of memory frames.

Reference String: 7, 0, 1, 2, 0, 3, 0, 4, 2, 3, 0, 3, 2

i. Implement LRU [20 marks]

Q3. Viva [5 Marks]

Q4. Internal Assessment [15 Marks]

Savitribai Phule Pune University

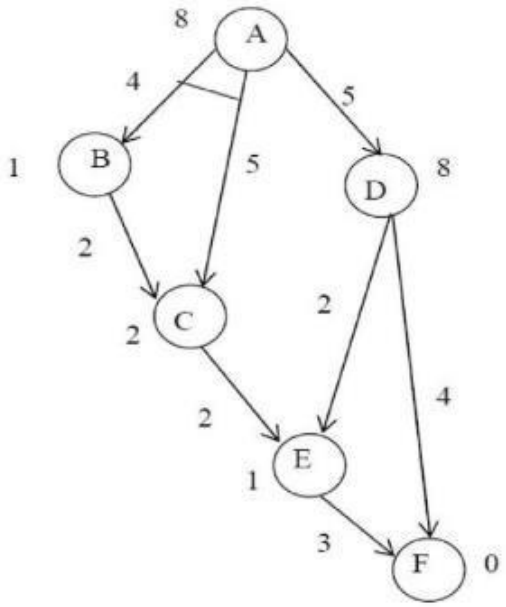
T.Y. B.C.A. (Science) (Semester-V) Practical Examination

BCA 358: DSE III Lab (Operating Systems and AI)

Duration: 3Hrs. **Max Marks: 35+15=50**

Q.1 Write a C program to accept the number of process and resources and find the need matrix content and display it. [10 marks]

Q.2 Implement AO* algorithm in C /python for following graph and find out minimum cost solution.



[20 marks]

OR

Q.2. Write the simulation program to implement demand paging and show the page scheduling and total number of page faults for the following given page reference string. Give input n =3 as the number of memory frames.

Reference String : 12,15,12,18,6,8,11,12,19,12,6,8,12,15,19,8

Implement OPT [20 marks]

Q3. Viva [5 Marks]

Q4. Internal Assessment [15 Marks]

Savitribai Phule Pune University

T.Y. B.C.A. (Science) (Semester-V) Practical Examination

BCA 358: DSE III Lab (Operating Systems and AI)

Duration: 3Hrs. **Max Marks: 35+15=50**

Q.1 Write a program to create a child process using fork().The parent should goto sleep state and child process should begin its execution. In the child process, use execl() to execute the "ls" command. [10 marks]

Q.2 Partially implement the Menu driven Banker's algorithm for accepting Allocation, Max from user.

a) Accept Available

b) Display Allocation, Max

c) Find Need and display It,

d) Display Available Consider the system with 3 resources types A,B, and C with 7,2,6 instances respectively.

Consider the following snapshot:

	ALLOCATION	REQUEST	TOTAL RESOURCES
p0	0 1 0	0 0 0	7 2 6
p1	2 0 0	2 0 0	
p2	3 0 3	0 0 1	
p3	2 1 1	1 0 0	
p4	0 0 2	0 0 2	

[20 marks]

OR

Q.2 Write the program to simulate Round Robin (RR) scheduling. The arrival time and first CPU-burst for different n number of processes should be input to the algorithm. Also give the time quantum as input. Assume the fixed IO waiting time (2 units). The next CPU-burst should be generated randomly. The output should give Gantt chart, turnaround time and waiting time for each process. Also find the average waiting time and turnaround time. [20 marks]

Q3. Viva [5 Marks]

Q4. Internal Assessment [15 Marks]

Savitribai Phule Pune University

T.Y. B.C.A. (Science) (Semester-V) Practical Examination

BCA 358: DSE III Lab (Operating Systems and AI)

Duration: 3Hrs. **Max Marks: 35+15=50**

Q.1 Write a program to illustrate the concept of orphan process (Using fork() and sleep()) [10 marks]

Q.2 Write the simulation program to implement demand paging and show the page scheduling and total number of page faults for the following given page reference string. Give input n=3 as the number of memory frames.

Reference String : 12,15,12,18,6,8,11,12,19,12,6,8,12,15,19,8

Implement OPT [20 marks]

OR

Q.2 Write the simulation program using FCFS. The arrival time and first CPU bursts of different jobs should be input to the system. Assume the fixed I/O waiting time (2 units). The next CPU burst should be generated using random function. The output should give the Gantt chart, Turnaround Time and Waiting time for each process and average times. [20 marks]

Q3. Viva [5 Marks]

Q4. Internal Assessment [15 Marks]

Savitribai Phule Pune University

T.Y. B.C.A. (Science) (Semester-V) Practical Examination

BCA 358: DSE III Lab (Operating Systems and AI)

Duration: 3Hrs. **Max Marks: 35+15=50**

Q.1 Create a child process using fork(), display parent and child process id. Child process will display the message “Hello World” and the parent process should display “Hi”.

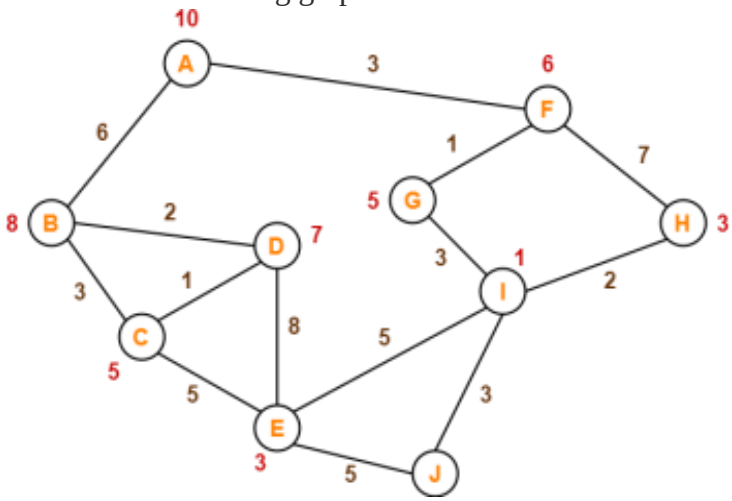
[10 marks]

Q.2 Write the simulation program to implement demand paging and show the page scheduling and total number of page faults for the following given page reference string. Give input n as the number of memory frames.
Reference String: 0, 2, 1, 6, 4, 0, 1, 0, 3, 1, 2, 1

Implement FIFO [20 marks]

OR

Consider the following graph



The numbers written on edges represent the distance between the nodes.
The numbers written on nodes represent the heuristic value.
Implement A* algorithm in C/Python for above graph and find out most cost-effective path from A to J. [20 marks]

Q.3 Viva
[5marks]
Q4. Internal Assessment [15 Marks]

Savitribai Phule Pune University

T.Y. B.C.A. (Science) (Semester-V) Practical Examination

BCA 358: DSE III Lab (Operating Systems and AI)

Duration: 3Hrs. **Max Marks: 35+15=50**

Q.1 [10] Write a program to illustrate the concept of orphan process (Using fork() and sleep()) . [10 marks]

Q.2 Write the simulation program to implement demand paging and show the page scheduling and total number of page faults for the following given page reference string.

Give input n as the number of memory frames.

Reference String : 12,15,12,18,6,8,11,12,19,12,6,8,12,15,19,8

Implement OPT [20 marks]

OR

Q2. Write the simulation program using FCFS. The arrival time and first CPU bursts of different jobs should be input to the system. Assume the fixed I/O waiting time (2 units). The next CPU burst should be generated using random function. The output should give the Gantt chart, Turnaround Time and Waiting time for each process and average times. [20 marks]

Q.3 Viva [5marks]

Q4. Internal Assessment [15 Marks]

Savitribai Phule Pune University

T.Y. B.C.A. (Science) (Semester-V) Practical Examination

BCA 358: DSE III Lab (Operating Systems and AI)

Duration: 3Hrs. **Max Marks: 35+15=50**

Q.1 Write a program that demonstrates the use of nice() system call. After a child process is started using fork(), assign higher priority to the child using nice() system call. [10 marks]

Q.2 Write a C program to simulate Banker's algorithm for the purpose of deadlock avoidance. Consider the following snapshot of system, A, B, C and D are the resource type.

	ALLOCATION				MAX			
	A	B	C	D	A	B	C	D
P0	0	0	1	2	0	0	1	2
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

AVAILABLE			
A	B	C	D
1	5	2	0

a) Calculate and display the content of need matrix?

b) Is the system in safe state? If display the safe sequence.

c) If a request from process P arrives for (0, 4, 2, 0) can it be granted immediately by keeping the system in safe state. Print a message. [20 marks]

OR

Write the simulation program using SJF(non-preemptive). The arrival time and first CPU bursts of different jobs should be input to the system. The Assume the fixed I/O waiting time (2 units).Thenext CPU burst should be generated using random function. The output should give the Gantt chart, Turnaround Time and Waiting time for each process and average times. [20 marks]

Q.3 Viva [5marks]

Q4. Internal Assessment [15 Marks]

Savitribai Phule Pune University

T.Y. B.C.A. (Science) (Semester-V) Practical Examination

BCA 358: DSE III Lab (Operating Systems and AI)

Duration: 3Hrs. **Max Marks: 35+15=50**

Q.1 Write a program to find the execution time taken for execution of a given set of instructions (use clock() function) [10 marks]

Q.2 Write the simulation program to implement demand paging and show the page scheduling and total number of page faults for the following given page reference string. Give input n =3 as the number of memory frames.

Reference String : 0, 2, 1, 6, 4, 0, 1, 0, 3, 1, 2, 1

Implement FIFO [20 marks]

OR

Write the simulation program using SJF(non-preemptive). The arrival time and first CPU bursts of different jobs should be input to the system. The Assume the fixed I/O waiting time (2 units).Thenext CPU burst should be generated using random function. The output should give the Gantt chart, Turnaround Time and Waiting time for each process and average times. [20 marks]

Q.3 Viva [5marks]

Q4. Internal Assessment [15 Marks]

Savitribai Phule Pune University

T.Y. B.C.A. (Science) (Semester-V) Practical Examination

BCA 358: DSE III Lab (Operating Systems and AI)

Duration: 3Hrs. **Max Marks: 35+15=50**

Q.1 Write a program to create a child process using fork().The parent should goto sleep state and child process should begin its execution. In the child process, use execl() to execute the "ls" command.

[10 marks]

Q.2 Write the simulation program to implement demand paging and show the page scheduling and total number of page faults for the following given page reference string. Give input n as the number of memory frames.

Reference String :7, 0, 1, 2, 0, 3, 0, 4, 2, 3, 0, 3, 2

Implement LRU [20 marks]

OR

Write the program to simulate Preemptive Shortest Job First (SJF) -scheduling. The arrival time and first CPU-burst for different n number of processes should be input to the algorithm. Assumethe fixed IO waiting time (2 units). The next CPU-burst should be generated randomly. The outputshould give Gantt chart, turnaround time and waiting time for each process. Also find the averagewaiting time and turnaround time. [20marks]

Q3. Viva [5marks]

Q4. Internal Assessment [15 Marks]

Savitribai Phule Pune University

T.Y. B.C.A. (Science) (Semester-V) Practical Examination

BCA 358: DSE III Lab (Operating Systems and AI)

Duration: 3Hrs. **Max Marks: 35+15=50**

Q.1 Write a program to find the execution time taken for execution of a given set of instructions (use clock()
function) [10 marks]

Q.2 Write the simulation program to implement demand paging and show the page scheduling and total number of page faults for the following given page reference string. Give input n =3 as the number of memory frames.

Reference String : 12,15,12,18,6,8,11,12,19,12,6,8,12,15,19,8

Implement OPT [20 marks]

OR

Given an initial state of a 8-puzzle problem and final state to be reached

2	8	3
1	6	4
7		5

Initial State

1	2	3
8		4
7	6	5

Final State

Find the most cost-effective path to reach the final state from initial state using A* Algorithm in C/Python.
Consider g(n) = Depth of node and h(n) = Number of misplaced tiles. [20 marks]

Q.3 Viva [5marks]

Q4. Internal Assessment [15 Marks]

Savitribai Phule Pune University

T.Y. B.C.A. (Science) (Semester-V) Practical Examination

BCA 358: DSE III Lab (Operating Systems and AI)

Duration: 3Hrs. **Max Marks: 35+15=50**

Q.1 Write the program to calculate minimum number of resources needed to avoid deadlock. [10 marks]

Q.2 Write the simulation program to implement demand paging and show the page scheduling and total number of page faults for the following given page reference string. Give input n=3 as the number of memory frames.

Reference String : 12,15,12,18,6,8,11,12,19,12,6,8,12,15,19,8

Implement OPT [20 marks]

OR

Write the simulation program using FCFS. The arrival time and first CPU bursts of different jobs should be input to the system. Assume the fixed I/O waiting time (2 units). The next CPU burst should be generated using random function. The output should give the Gantt chart, Turnaround Time and Waiting time for each process and average times. [20 marks]

Q.3 Viva [5marks]

Q4. Internal Assessment [15 Marks]

Savitribai Phule Pune University

T.Y. B.C.A. (Science) (Semester-V) Practical Examination

BCA 358: DSE III Lab (Operating Systems and AI)

Duration: 3Hrs. **Max Marks: 35+15=50**

Q. 1 Write a C program to accept the number of process and resources and find the need matrix content and display it. [10 marks]

Q.2 Write the simulation program to implement demand paging and show the page scheduling and total number of page faults for the following given page reference string. Give input n as the number of memory frames.

Reference String : 12,15,12,18,6,8,11,12,19,12,6,8,12,15,19,8

Implement OPT [20 marks]

OR

Write the simulation program using SJF (non-preemptive). The arrival time and first CPU bursts of different jobs should be input to the system. The Assume the fixed I/O waiting time (2 units).Thenext CPU burst should be generated using random function. The output should give the Gantt chart, Turnaround Time and Waiting time for each process and average times. [20marks]

Q.3 Viva [5marks]

Q4. Internal Assessment [15 Marks]

Savitribai Phule Pune University

T.Y. B.C.A. (Science) (Semester-V) Practical Examination

BCA 358: DSE III Lab (Operating Systems and AI)

Duration: 3Hrs. **Max Marks: 35+15=50**

Q.1 Write a program to create a child process using fork().The parent should goto sleep state and child process should begin its execution. In the child process, use execl() to execute the "ls" command. [10 marks]

Q.2 Write the program to simulate Non-preemptive Priority scheduling. The arrival time and first CPU burst and priority for different n number of processes should be input to the algorithm. Assume the fixed IO waiting time (2 units). The next CPU-burst should be generated randomly. The output should give Gantt chart, turnaround time and waiting time for each process. Also find the average waiting time and turnaround time. [20 marks]

OR

Write a C program to simulate Banker's algorithm for the purpose of deadlock avoidance. Consider the following snapshot of system, A, B, C and D are the resource type.

	ALLOCATION				MAX			
	A	B	C	D	A	B	C	D
P0	0	0	1	2	0	0	1	2
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

AVAILABLE			
A	B	C	D
1	5	2	0

a) Calculate and display the content of need matrix?

b) Is the system in safe state? If display the safe sequence.

c) If a request from process P arrives for (0, 4, 2, 0) can it be granted immediately by keeping the system in safe state. Print a message [20 marks]

Q.3 Viva [5marks]

Q4. Internal Assessment [15 Marks]

Savitribai Phule Pune University

T.Y. B.C.A. (Science) (Semester-V) Practical Examination

BCA 358: DSE III Lab (Operating Systems and AI)

Duration: 3Hrs. **Max Marks: 35+15=50**

Q.1 Write a program to create a child process using fork().The parent should goto sleep state and child process should begin its execution. In the child process, use execl() to execute the "ls" command. [10 marks]

Q.2 Write the simulation program to implement demand paging and show the page scheduling and total number of page faults for the following given page reference string. Give input n=3 as the number of memory frames.

Reference String : 7, 0, 1, 2, 0, 3, 0, 4, 2, 3, 0, 3, 2

i. Implement LRU [20 marks]

OR

[20 marks]

Write the simulation program using FCFS. The arrival time and first CPU bursts of different jobs should be input to the system. Assume the fixed I/O waiting time (2 units). The next CPU burst should be generated using random function. The output should give the Gantt chart, Turnaround Time and Waiting time for each process and average times.

Q.3 Viva [5marks]

Q4. Internal Assessment [15 Marks]

Savitribai Phule Pune University

T.Y. B.C.A (Science)

Semester – V

C.B.C.S 2019 Pattern

BCA366

DSE IV Lab

(Android Programming)

Savitribai Phule Pune University

T.Y. B.C.A. (Science) (Semester-VI) Practical Examination

BCA 366: DSE IV Lab (Android Programming)

Duration: 3Hrs. **Max Marks: 35+15=50**

Q1. Create a Simple Application which shows the Life Cycle of Activity. [10 Marks]

Q2. Create an Android application to demonstrate Progress Dialog Box using AsyncTask

[20 Marks]

OR

Q2. Create an Android Application that demonstrate DatePicker and DatePickerDailog.

[20 Marks]

Q3. Viva [5 Marks]

Q4. Internal Assessment [15 Marks]

Savitribai Phule Pune University

T.Y. B.C.A. (Science) (Semester-VI) Practical Examination

BCA 366: DSE IV Lab (Android Programming)

Duration: 3Hrs. **Max Marks: 35+15=50**

Q1. Create a Simple Application, which reads a positive number from the user and display its factorial value in another activity. [10 Marks]

Q2. Create an Android application that plays an audio(song) in the background. Audio will notbe stopped even if you switch to another activity. To stop the audio, you need to stop the service. [20 Marks]

OR

Q2. Create an Android Application to display satellite view of current location using Google Map. [20 Marks]

Q3. Viva [5 Marks]

Q4. Internal Assessment [15 Marks]

Savitribai Phule Pune University

T.Y. B.C.A. (Science) (Semester-VI) Practical Examination

BCA 366: DSE IV Lab (Android Programming)

Duration: 3Hrs. **Max Marks: 35+15=50**

Q1. Create an Android Application that will change color of the College Name on click ofPush Button and change the font size, font style of text view using xml. [10 Marks]

Q2. Create an Android Application to find the factorial of a number and Display the Resulton Alert Box. [20 Marks]

OR

Q2. Create an Android App, it reads the Students Details (Name, Surname, Class, Gender, Hobbies, Marks) and display the all information in another activity in table format on click of Submit button. [20 Marks]

Q3. Viva [5 Marks]

Q4. Internal Assessment [15 Marks]

Savitribai Phule Pune University

T.Y. B.C.A. (Science) (Semester-VI) Practical Examination

BCA 366: DSE IV Lab (Android Programming)

Duration: 3Hrs. **Max Marks: 35+15=50**

Q1. Create a Simple Application, that performs Arithmetic Operations. (Use constraint layout) [10 Marks]

Q2. Create an Android Application that sends the Notification on click of the button and displays the notification message on the second activity. [20 Marks]

OR

Q2. Create an android Application for performing the following operation on the table Customer (id, name, address, phno). (use SQLite database)

i) Insert New Customer Details.

ii) Show All the Customer Details on Toast Message.

[20 Marks]

Q3. Viva [5 Marks]

Q4. Internal Assessment [15 Marks]

Savitribai Phule Pune University

T.Y. B.C.A. (Science) (Semester-VI) Practical Examination

BCA 366: DSE IV Lab (Android Programming)

Duration: 3Hrs. **Max Marks: 35+15=50**

Q1. Create an Android Application to accept two numbers and find power and Average. Display the result on the next activity on Button click. [10 Marks]

Q2. Create an Android application that creates a custom Alert Dialog containing Friends Name and onClick of Friend Name Button greet accordingly. [20 Marks]

OR

Q2. Create an Android Application to perform Zoom In, Zoom Out operation and display Satellite view, on Google Map. [20 Marks]

Q3. Viva [5 Marks]

Q4. Internal Assessment [15 Marks]

Savitribai Phule Pune University

T.Y. B.C.A. (Science) (Semester-VI) Practical Examination

BCA 366: DSE IV Lab (Android Programming)

Duration: 3Hrs. **Max Marks: 35+15=50**

Q1. Create a Simple Application Which Send ―Hello! message from one activity to anotherwith help of Button (Use Intent). [10 Marks]

Q2. Create an Android Application that Demonstrates ListView and Onclick of List Displaythe Toast. [20 Marks]

OR

Q2. Create an Android application to perform following operations on table Student (Sid ,Sname ,phno). Use autoincrement for Sid and Perform following Operations.

a) Add Student and display its information.
b) Delete Student [20 Marks]

Q3. Viva [5 Marks]

Q4. Internal Assessment [15 Marks]

Savitribai Phule Pune University

T.Y. B.C.A. (Science) (Semester-VI) Practical Examination

BCA 366: DSE IV Lab (Android Programming)

Duration: 3Hrs. **Max Marks: 35+15=50**

Q1. Create an Android Application that Demonstrate Radio Button. [10 Marks]Q2.

Create an Android application to demonstrate phone call using Implicit Intent.

[20 Marks]

OR

Q2. Write an android code to turn ON /OFF the Wi-Fi [20 Marks]

Q3. Viva [5 Marks]

Q4. Internal Assessment [15 Marks]

Savitribai Phule Pune University

T.Y. B.C.A. (Science) (Semester-VI) Practical Examination

BCA 366: DSE IV Lab (Android Programming)

Duration: 3Hrs. **Max Marks: 35+15=50**

Q1. Create an Android App with Login Screen. On successful login, gives message go to next Activity (Without Using Database& use Table Layout). [10 Marks]

Q2. Create an android application to demonstrate how to use a service to download a file fromthe Internet on click of Download Button. Once done, the service notifies the activity via a broadcast receiver that the download is complete. [20 Marks]

OR

Q2. Create application to send email with attachment. [20 Marks]

Q3. Viva [5 Marks]

Q4. Internal Assessment [15 Marks]

Savitribai Phule Pune University

T.Y. B.C.A. (Science) (Semester-VI) Practical Examination

BCA 366: DSE IV Lab (Android Programming)

Duration: 3Hrs. **Max Marks: 35+15=50**

Q1. Write an Android application to accept two numbers from the user, and display them, but reject input if both numbers are greater than 10 and asks for two new numbers.

[10 Marks]

Q2. Write a program to find the specific location of an Android device and display details ofthe place like Address line, city with Geocoding.

[20 Marks]

OR

Q2. Create table Company (id, name, address, phno). Create Application for Performing the following operation on the table.

a) Insert New Company details.
b) Show All Company details

[20 Marks]

Q3. Viva [5 Marks]

Q4. Internal Assessment [15 Marks]

Savitribai Phule Pune University

T.Y. B.C.A. (Science) (Semester-VI) Practical Examination

BCA 366: DSE IV Lab (Android Programming)

Duration: 3Hrs. **Max Marks: 35+15=50**

Q1. Create an Android Application that Demonstrate Switch and Toggle Button. [10 Marks]

Q2. Create a fragment that has its own UI and enable your activities to communicate with fragments. [20 Marks]

OR

Q2. Demonstrate Array Adapter using List View to display list of fruits. [20 Marks]Q3.

Viva [5 Marks]

Q4. Internal Assessment [15 Marks]

Savitribai Phule Pune University

T.Y. B.C.A. (Science) (Semester-VI) Practical Examination

BCA 366: DSE IV Lab (Android Programming)

Duration: 3Hrs. **Max Marks: 35+15=50**

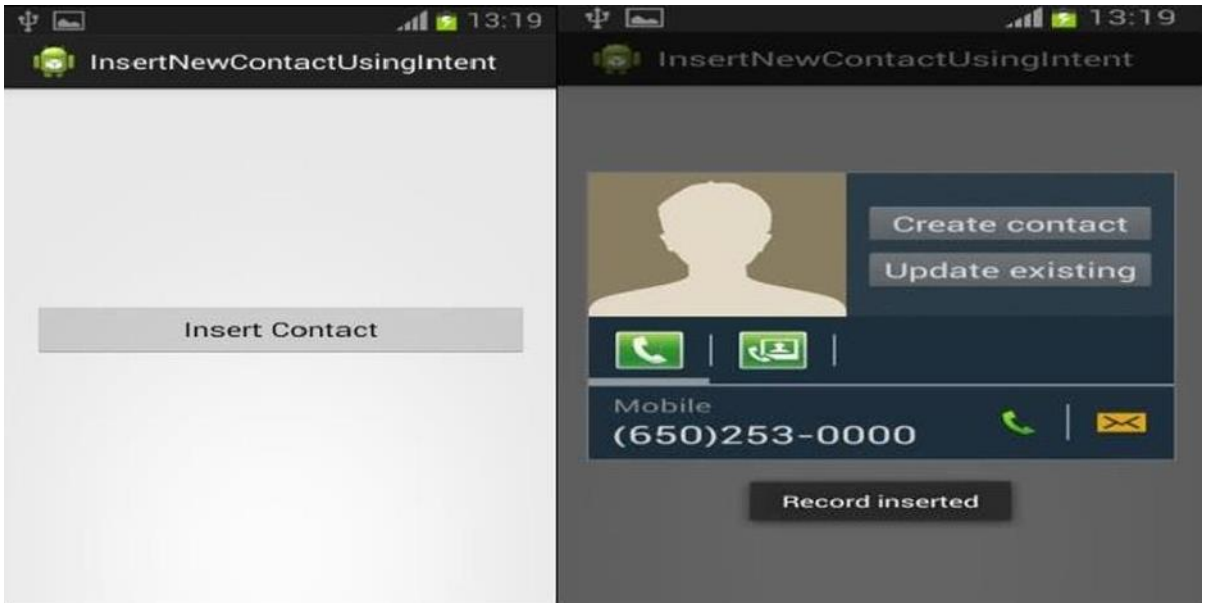
Q.1 Create android application to change Font Size, Color and Font Family of String.

[10 Marks]

Q.2 Create First Activity to accept information like Student First Name, Middle Name, Last Name, Date of birth, Address, Email ID and display all information on Second Activity whenuser click on the Submit button. [20 Marks]

OR

Q.2 Create new contact for designing following layout. [20 Marks]



Q3. Viva [5 Marks]

Q4. Internal Assessment [15 Marks]

Savitribai Phule Pune University

T.Y. B.C.A. (Science) (Semester-VI) Practical Examination

BCA 366: DSE IV Lab (Android Programming)

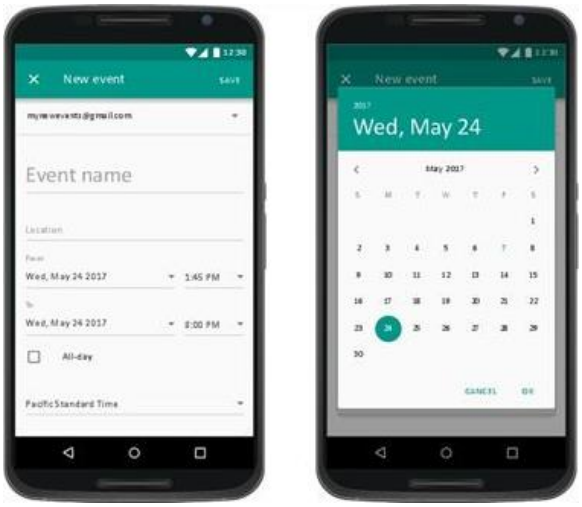
Duration: 3Hrs. **Max Marks: 35+15=50**

Q1.Create a Simple Application Which Send ―Hi‖ message from one activity to another withhelp of Button (Use Intent). [10 Marks]

Q2. Create a custom "Contact" layout to hold multiple pieces of information, including: Photo, Name, Contact Number, E-mail id. [20 Marks]

OR

Q.2 Create an application to demonstrate date and time picker. [20 Marks]



Q3. Viva [5 Marks]

Q4. Internal Assessment [15 Marks]

Savitribai Phule Pune University

T.Y. B.C.A. (Science) (Semester-VI) Practical Examination

BCA 366: DSE IV Lab (Android Programming)

Duration: 3Hrs. **Max Marks: 35+15=50**

Q1. Create following Vertical Scroll View Creation in Android. [10 Marks]

Q2. Write a program to search a specific location on Google Map. [20 Marks]

OR

Q2. Write an application to accept a teacher name from user and display the names of studentsalong with subjects to whom they are teaching.

Create table Student (sno , s_name,s_class,s_addr)
Teacher (tno, t_name, qualification, experience)
Student-Teacher has Many to Many relationship.

[20 Marks]

Q3. Viva [5 Marks]

Q4. Internal Assessment [15 Marks]

Savitribai Phule Pune University

T.Y. B.C.A. (Science) (Semester-VI) Practical Examination

BCA 366: DSE IV Lab (Android Programming)

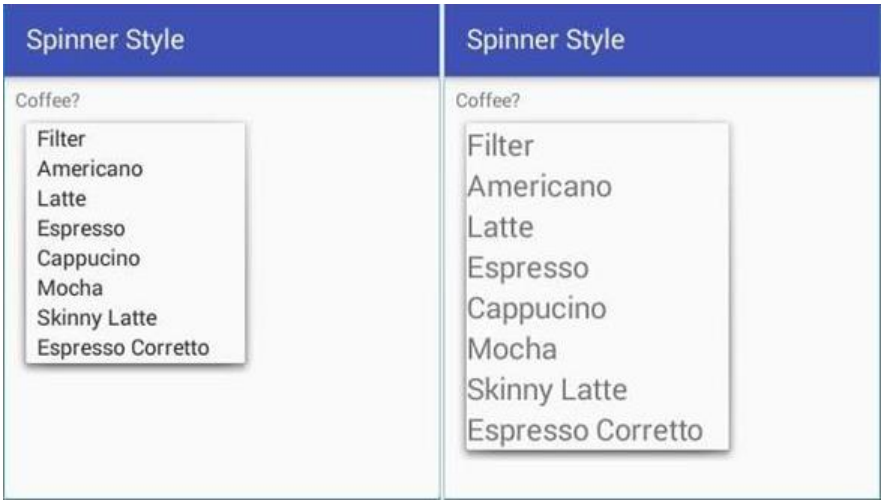
Duration: 3Hrs. **Max Marks: 35+15=50**

Q1. Create a Simple Application which shows Life Cycle of Activity. [10 Marks]

{Use log}.

Q2. Create the following layout which is changing android spinner text size with styles.

[20 Marks]



OR

Q2. Create an Android application to send email. [20 Marks]

Q3. Viva [5 Marks]

Q4. Internal Assessment [15 Marks]

Savitribai Phule Pune University

T.Y. B.C.A. (Science) (Semester-VI) Practical Examination

BCA 366: DSE IV Lab (Android Programming)

Duration: 3Hrs. **Max Marks: 35+15=50**

Q1. Design following-add a border to an Android Layout. [10 Marks]

Q2. Create simple application with Login Screen. On successful login, gives message go tonext Activity (Without Using Database). [20 Marks]

OR

Q2. Create First Activity to accept information like Employee First Name, Middle Name, LastName, Salary, Address, Email ID and display all information on Second Activity when user click on Submit button. [20 Marks]

Q3. Viva [5 Marks]

Q4. Internal Assessment [15 Marks]

Savitribai Phule Pune University

T.Y. B.C.A. (Science) (Semester-VI) Practical Examination

BCA 366: DSE IV Lab (Android Programming)

Duration: 3Hrs. **Max Marks: 35+15=50**

Q1. Create an Android App, it reads the Students Details (Name, Surname, Class, Gender, Hobbies, Marks) and display the all information in another activity in table format on click ofSubmit button. [10 Marks]

Q2. Create an Android Application that Demonstrate TimePicker and display Selected Time on TextView. [20 Marks]

OR

Q2. Create a Simple calculator. [20 Marks]

Q3. Viva [5 Marks]

Q4. Internal Assessment [15 Marks]

Savitribai Phule Pune University

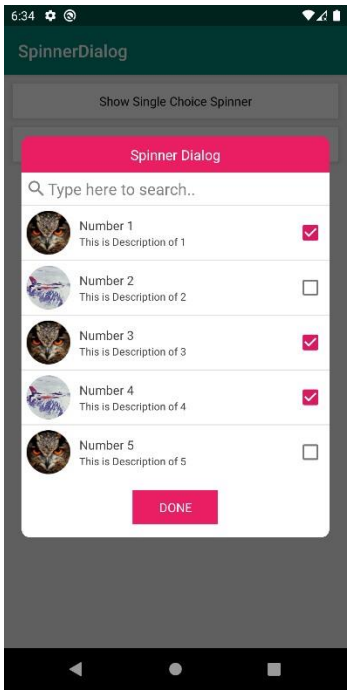
T.Y. B.C.A. (Science) (Semester-VI) Practical Examination

BCA 366: DSE IV Lab (Android Programming)

Duration: 3Hrs. **Max Marks: 35+15=50**

Q1. Write an android code to make phone call using Intent. [10 Marks]Q2.

Create an android application that demonstrate Spinner.



[20 Marks]

OR

Q2. Construct an Android Application to accept a number and calculate Factorial and Sum of Digits of a given number using Context Menu. [20 Marks]

Q3. Viva [5 Marks]

Q4. Internal Assessment [15 Marks]

Savitribai Phule Pune University

T.Y. B.C.A. (Science) (Semester-VI) Practical Examination

BCA 366: DSE IV Lab (Android Programming)

Duration: 3Hrs. **Max Marks: 35+15=50**

Q1. Create an Android Application that Demonstrate Alert Dialog Box. [10 Marks]Q2. Create an Android Application that produce Notification. [20 Marks]

OR

Q2Create an Android Application to accept two numbers and find power and Average. Display the result on the next activity using Context Menu. [20 Marks]

Q3. Viva [5 Marks]

Q4. Internal Assessment [15 Marks]

Savitribai Phule Pune University

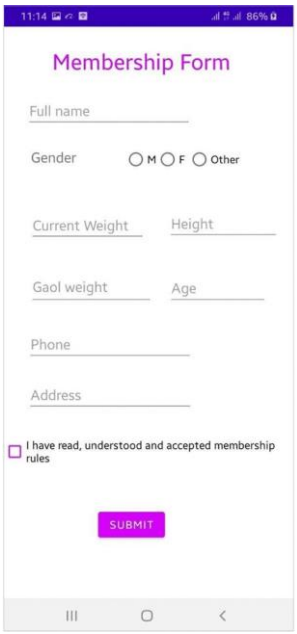
T.Y. B.C.A. (Science) (Semester-VI) Practical Examination

BCA 366: DSE IV Lab (Android Programming)

Duration: 3Hrs. **Max Marks: 35+15=50**

Q1. Create an Android Application that on/off the bulb using Toggle Button. [10 Marks] Q2.

Design Following Screens using Table Layout. Display the entered text on next activity.



[20 Marks]

OR

Q2. Create application to send SMS message. After sending message display delivery report of message. [20 Marks]

Q3. Viva [5 Marks]

Q4. Internal Assessment [15 Marks]

Savitribai Phule Pune University

T.Y. B.C.A. (Science) (Semester-VI) Practical Examination

BCA 366: DSE IV Lab (Android Programming)

Duration: 3Hrs. **Max Marks: 35+15=50**

Q1. Create Android Program to Change the Image on the Screen. [10 Marks]Q2. Demonstrate Options Menu, Context Menu and Popup Menu in android. [20 Marks]

OR

Q2. Demonstrate Array Adapter using List View to display list of Country. [20 Marks]Q3. Viva [5 Marks]

Q4. Internal Assessment [15 Marks]

Savitribai Phule Pune University

T.Y. B.C.A (Science)

Semester – VI

C.B.C.S 2019 Pattern

BCA367

DSE V Lab

(Programming in GO and IoT)

Savitribai Phule Pune University

T.Y. B.C.A. (Science) (Semester-VI) Practical Examination

BCA 367: DSE V Lab (Programming in GO and IoT)

Duration: 3Hrs. **Max Marks: 35+15=50**

Q1. A) Write a program in GO language to accept user choice and print answers using arithmetic operators. [20 Marks]

OR

B) Write a program in GO language to accept n student details like roll_no, stud_name, mark1,mark2, mark3. Calculate the total and average of marks using structure. [20 Marks]

Q2. a. Draw block diagram /pin diagram of Raspberry-Pi/ Beagle board /Arduino Uno board interfacing with IR Sensor/Temperature Sensor/Camera. [10 Marks]
(Internal Examiner assign any one option for board and interface device and respective interface programming option)
b. WAP in python/C++ language to blink LED.
c. Write down the observations on Input and Output
d. Write down the Result and Conclusion

Q3. Viva [5 Marks]

Q4. Internal Assessment [15 Marks]

Savitribai Phule Pune University

T.Y. B.C.A. (Science) (Semester-VI) Practical Examination

BCA 367: DSE V Lab (Programming in GO and IoT)

Duration: 3Hrs. **Max Marks: 35+15=50**

Q1. A) Write a program in GO language to print Fibonacci series of n terms. [20 Marks]

OR

B) Write a program in GO language to print file information. [20 Marks]

Q2. a. Draw block diagram /pin diagram of Raspberry-Pi/ Beagle board /Arduino Uno board interfacing with IR Sensor/Temperature Sensor/Camera. [10 Marks]
(Internal Examiner assign any one option for board and interface device and respective interface programming option)

b. WAP in python/C++ language to turn ON/OFF buzzer.

c. Write down the observations on Input and Output

d. Write down the Result and Conclusion

Q3. Viva [5 Marks]

Q4. Internal Assessment [15 Marks]

Savitribai Phule Pune University

T.Y. B.C.A. (Science) (Semester-VI) Practical Examination

BCA 367: DSE V Lab (Programming in GO and IoT)

Duration: 3Hrs. **Max Marks: 35+15=50**

Q1. A) Write a program in the GO language using function to check whether accepts number is palindrome or not. [20 Marks]

OR

B) Write a Program in GO language to accept n records of employee information (eno,ename,salary) and display record of employees having maximum salary. [20 Marks]

Q2. a. Draw block diagram /pin diagram of Raspberry-Pi/ Beagle board /Arduino Uno board interfacing with IR Sensor/Temperature Sensor/Camera. [10 Marks]
(Internal Examiner assign any one option for board and interface device and respective interface programming option)

b. WAP in python/C++ language to blink LED.

c. Write down the observations on Input and Output

d. Write down the Result and Conclusion

Q3. Viva [5 Marks]

Q4. Internal Assessment [15 Marks]

Savitribai Phule Pune University

T.Y. B.C.A. (Science) (Semester-VI) Practical Examination

BCA 367: DSE V Lab (Programming in GO and IoT)

Duration: 3Hrs. **Max Marks: 35+15=50**

Q1. A) Write a program in GO language to print a recursive sum of digits of a given number. [20 Marks]

OR

B) Write a program in GO language to sort array elements in ascending order. [20 Marks]

Q2. a. Draw block diagram /pin diagram of Raspberry-Pi/ Beagle board /Arduino Uno board interfacing with IR Sensor/Temperature Sensor/Camera. [10 Marks]
(Internal Examiner assign any one option for board and interface device and respective interface programming option)

b. WAP in python/C++ language to toggle two LED's.

c. Write down the observations on Input and Output

d. Write down the Result and Conclusion

Q3. Viva [5 Marks]

Q4. Internal Assessment [15 Marks]

Savitribai Phule Pune University

T.Y. B.C.A. (Science) (Semester-VI) Practical Examination

BCA 367: DSE V Lab (Programming in GO and IoT)

Duration: 3Hrs. **Max Marks: 35+15=50**

Q1. A) Write a program in GO language program to create Text file [20 Marks]

OR

B) Write a program in GO language to accept n records of employee information (eno,ename,salary) and display records of employees having minimum salary. [20 Marks]

Q2. a. Draw block diagram /pin diagram of Raspberry-Pi/ Beagle board /Arduino Uno board interfacing with IR Sensor/Temperature Sensor/Camera. [10 Marks]
(Internal Examiner assign any one option for board and interface device and respective interface programming option)

b. WAP in python/C++ language to blink LED.

c. Write down the observations on Input and Output

d. Write down the Result and Conclusion

Q3. Viva [5 Marks]

Q4. Internal Assessment [15 Marks]

Savitribai Phule Pune University

T.Y. B.C.A. (Science) (Semester-VI) Practical Examination

BCA 367: DSE V Lab (Programming in GO and IoT)

Duration: 3Hrs. **Max Marks: 35+15=50**

Q1. A) Write a program in GO language to accept two matrices and display its multiplication [20 Marks]

OR

B) Write a program in GO language to copy all elements of one array into another using a method. [20 Marks]

Q2. a. Draw block diagram /pin diagram of Raspberry-Pi/ Beagle board /Arduino Uno board interfacing with IR Sensor/Temperature Sensor/Camera. [10 Marks]
(Internal Examiner assign any one option for board and interface device and respective interface programming option)
b. WAP in python/C++ language to toggle two LED's.
c. Write down the observations on Input and Output
d. Write down the Result and Conclusion

Q3. Viva [5 Marks]

Q4. Internal Assessment [15 Marks]

Savitribai Phule Pune University

T.Y. B.C.A. (Science) (Semester-VI) Practical Examination

BCA 367: DSE V Lab (Programming in GO and IoT)

Duration: 3Hrs. **Max Marks: 35+15=50**

Q1. A) Write a program in GO language to accept one matrix and display its transpose. [20 Marks]

OR

B) Write a program in GO language to create structure student. Writea method show() whose receiver is a pointer of struct student. [20 Marks]

Q2. a. Draw block diagram /pin diagram of Raspberry-Pi/ Beagle board /Arduino Uno board interfacing with IR Sensor/Temperature Sensor/Camera. [10 Marks]
(Internal Examiner assign any one option for board and interface device and respective interface programming option)

b. WAP in python/C++ language to turn ON/OFF buzzer.

c. Write down the observations on Input and Output

d. Write down the Result and Conclusion

Q3. Viva [5 Marks]

Q4. Internal Assessment [15 Marks]

Savitribai Phule Pune University

T.Y. B.C.A. (Science) (Semester-VI) Practical Examination

BCA 367: DSE V Lab (Programming in GO and IoT)

Duration: 3Hrs. **Max Marks: 35+15=50**

Q1. A) Write a program in GO language to accept the book details such as BookID, Title, Author, Price. Read and display the details of 'n' number of books [20 Marks]

OR

B) Write a program in GO language to create an interface shape that includes area and perimeter. Implements these methods in circle and rectangle type. [20 Marks]

Q2. a. Draw block diagram /pin diagram of Raspberry-Pi/ Beagle board /Arduino Uno board interfacing with IR Sensor/Temperature Sensor/Camera. [10 Marks]
(Internal Examiner assign any one option for board and interface device and respective interface programming option)

b. WAP in python/C++ language to blink LED.

c. Write down the observations on Input and Output

d. Write down the Result and Conclusion

Q3. Viva [5 Marks]

Q4. Internal Assessment [15 Marks]

Savitribai Phule Pune University

T.Y. B.C.A. (Science) (Semester-VI) Practical Examination

BCA 367: DSE V Lab (Programming in GO and IoT)

Duration: 3Hrs. **Max Marks: 35+15=50**

Q1. A) Write a program in GO language using a function to check whether the accepted number is palindrome or not. [20 Marks]

OR

B) Write a program in GO language to create an interface shape that includes area and volume. Implements these methods in square and rectangle type. [20 Marks]

Q2. a. Draw block diagram /pin diagram of Raspberry-Pi/ Beagle board /Arduino Uno board interfacing with IR Sensor/Temperature Sensor/Camera. [10 Marks]
(Internal Examiner assign any one option for board and interface device and respective interface programming option)

b. WAP in python/C++ language to blink LED.

c. Write down the observations on Input and Output

d. Write down the Result and Conclusion

Q3. Viva [5 Marks]

Q4. Internal Assessment [15 Marks]

Savitribai Phule Pune University

T.Y. B.C.A. (Science) (Semester-VI) Practical Examination

BCA 367: DSE V Lab (Programming in GO and IoT)

Duration: 3Hrs. **Max Marks: 35+15=50**

Q1. A) Write a program in GO language to create an interface and display its values with the help of type assertion. [20 Marks]

OR

B) Write a program in GO language to read and write Fibonacci series to the using channel. [20 Marks]

Q2. a. Draw block diagram /pin diagram of Raspberry-Pi/ Beagle board /Arduino Uno board interfacing with IR Sensor/Temperature Sensor/Camera. [10 Marks]
(Internal Examiner assign any one option for board and interface device and respective interface programming option)

b. WAP in python/C++ language to turn ON/OFF buzzer.

c. Write down the observations on Input and Output

d. Write down the Result and Conclusion

Q3. Viva [5 Marks]

Q4. Internal Assessment [15 Marks]

Savitribai Phule Pune University

T.Y. B.C.A. (Science) (Semester-VI) Practical Examination

BCA 367: DSE V Lab (Programming in GO and IoT)

Duration: 3Hrs. **Max Marks: 35+15=50**

Q1. A) Write a program in GO language to check whether the accepted number is two digit or not. [20 Marks]

OR

B) Write a program in GO language to create a buffered channel, store few values in it and find channel capacity and length. Read values from channel and find modified length of a channel [20 Marks]

Q2. a. Draw block diagram /pin diagram of Raspberry-Pi/ Beagle board /Arduino Uno board interfacing with IR Sensor/Temperature Sensor/Camera. [10 Marks]
(Internal Examiner assign any one option for board and interface device and respective interface programming option)

b. WAP in python/C++ language to turn ON/OFF buzzer.

c. Write down the observations on Input and Output

d. Write down the Result and Conclusion

Q3. Viva [5 Marks]

Q4. Internal Assessment [15 Marks]

Savitribai Phule Pune University

T.Y. B.C.A. (Science) (Semester-VI) Practical Examination

BCA 367: DSE V Lab (Programming in GO and IoT)

Duration: 3Hrs. **Max Marks: 35+15=50**

Q1. A) Write a program in GO language to swap two numbers using call by reference concept [20 Marks]

OR

B) Write a program in GO language that creates a slice of integers, checks numbers from the slice are even or odd and further sent to respective go routines through channel and display values received by goroutines. [20 Marks]

Q2. a. Draw block diagram /pin diagram of Raspberry-Pi/ Beagle board /Arduino Uno board interfacing with IR Sensor/Temperature Sensor/Camera. [10 Marks]
(Internal Examiner assign any one option for board and interface device and respective interface programming option)

b. WAP in python/C++ language to toggle two LED's.

c. Write down the observations on Input and Output

d. Write down the Result and Conclusion

Q3. Viva [5 Marks]

Q4. Internal Assessment [15 Marks]

Savitribai Phule Pune University

T.Y. B.C.A. (Science) (Semester-VI) Practical Examination

BCA 367: DSE V Lab (Programming in GO and IoT)

Duration: 3Hrs. **Max Marks: 35+15=50**

Q1. A) Write a program in GO language to print sum of all even and odd numbers separately between 1 to 100. [20 Marks]

OR

B) Write a function in GO language to find the square of a number and write a benchmark for it. [20 Marks]

Q2. a. Draw block diagram /pin diagram of Raspberry-Pi/ Beagle board /Arduino Uno board interfacing with IR Sensor/Temperature Sensor/Camera. [10 Marks]
(Internal Examiner assign any one option for board and interface device and respective interface programming option)

b. WAP in python/C++ language to toggle two LED's.

c. Write down the observations on Input and Output

d. Write down the Result and Conclusion

Q3. Viva [5 Marks]

Q4. Internal Assessment [15 Marks]

Savitribai Phule Pune University

T.Y. B.C.A. (Science) (Semester-VI) Practical Examination

BCA 367: DSE V Lab (Programming in GO and IoT)

Duration: 3Hrs. **Max Marks: 35+15=50**

Q1. A) Write a program in GO language to demonstrate working of slices (like append, remove, copy etc.) [20 Marks]

OR

B) Write a program in GO language using go routine and channel that will print the sum of the squares and cubes of the individual digits of a number. Example if number is 123 then
squares = (1 * 1) + (2 * 2) + (3 * 3)
cubes = (1 * 1 * 1) + (2 * 2 * 2) + (3 * 3 * 3). [20 Marks]

Q2. [10 Marks]

a. Draw block diagram /pin diagram of Raspberry-Pi/ Beagle board /Arduino Uno board interfacing with IR Sensor/Temperature Sensor/Camera.
(Internal Examiner assign any one option for board and interface device and respective interface programming option)

b. WAP in python/C++ language to turn ON/OFF buzzer.

c. Write down the observations on Input and Output

d. Write down the Result and Conclusion

Q3. Viva [5 Marks]

Q4. Internal Assessment [15 Marks]

Savitribai Phule Pune University

T.Y. B.C.A. (Science) (Semester-VI) Practical Examination

BCA 367: DSE V Lab (Programming in GO and IoT)

Duration: 3Hrs. **Max Marks: 35+15=50**

Q1. A) Write a program in GO language to demonstrate function return multiple values. [20 Marks]

OR

B) Write a program in GO language to read XML file into structure and display structure [20 Marks]

Q2. a. Draw block diagram /pin diagram of Raspberry-Pi/ Beagle board /Arduino Uno board interfacing with IR Sensor/Temperature Sensor/Camera. [10 Marks]
(Internal Examiner assign any one option for board and interface device and respective interface programming option)
b. WAP in python/C++ language to toggle two LED's.
c. Write down the observations on Input and Output
d. Write down the Result and Conclusion

Q3. Viva [5 Marks]

Q4. Internal Assessment [15 Marks]

Savitribai Phule Pune University

T.Y. B.C.A. (Science) (Semester-VI) Practical Examination

BCA 367: DSE V Lab (Programming in GO and IoT)

Duration: 3Hrs. **Max Marks: 35+15=50**

Q1. A) Write a program in GO language to create a user defined package to find out the area of a rectangle. [20 Marks]

OR

B) Write a program in GO language that prints out the numbers from 0 to 10, waiting between 0 and 250 ms after each one using the delay function. [20 Marks]

Q2. a. Draw block diagram /pin diagram of Raspberry-Pi/ Beagle board /Arduino Uno board interfacing with IR Sensor/Temperature Sensor/Camera. [10 Marks]
(Internal Examiner assign any one option for board and interface device and respective interface programming option)

b. WAP in python/C++ language to blink LED.

c. Write down the observations on Input and Output

d. Write down the Result and Conclusion

Q3. Viva [5 Marks]

Q4. Internal Assessment [15 Marks]

Savitribai Phule Pune University

T.Y. B.C.A. (Science) (Semester-VI) Practical Examination

BCA 367: DSE V Lab (Programming in GO and IoT)

Duration: 3Hrs. **Max Marks: 35+15=50**

Q1. A) Write a program in GO language to illustrate the concept of returning multiple values from a function. (Add, Subtract, Multiply, Divide) [20 Marks]

OR

B) Write a program in GO language to add or append content at the end of a text file [20 Marks]

Q2. a. Draw block diagram /pin diagram of Raspberry-Pi/ Beagle board /Arduino Uno board interfacing with IR Sensor/Temperature Sensor/Camera. [10 Marks]
(Internal Examiner assign any one option for board and interface device and respective interface programming option)

b. WAP in python/C++ language to toggle two LED's.

c. Write down the observations on Input and Output

d. Write down the Result and Conclusion

Q3. Viva [5 Marks]

Q4. Internal Assessment [15 Marks]

Savitribai Phule Pune University

T.Y. B.C.A. (Science) (Semester-VI) Practical Examination

BCA 367: DSE V Lab (Programming in GO and IoT)

Duration: 3Hrs. **Max Marks: 35+15=50**

Q1. A) Write a program in GO language to print a multiplication table of number using function. [20 Marks]

OR

B) Write a program in GO language using a user defined package calculator that performs one calculator operation as per the user's choice. [20 Marks]

Q2. a. Draw block diagram /pin diagram of Raspberry-Pi/ Beagle board /Arduino Uno board interfacing with IR Sensor/Temperature Sensor/Camera. [10 Marks]
(Internal Examiner assign any one option for board and interface device and respective interface programming option)

b. WAP in python/C++ language to turn ON/OFF buzzer.

c. Write down the observations on Input and Output

d. Write down the Result and Conclusion

Q3. Viva [5 Marks]

Q4. Internal Assessment [15 Marks]

Savitribai Phule Pune University

T.Y. B.C.A. (Science) (Semester-VI) Practical Examination

BCA 367: DSE V Lab (Programming in GO and IoT)

Duration: 3Hrs. **Max Marks: 35+15=50**

Q1. A) Write a program in GO language to illustrate the function returning multiple values(add, subtract). [20 Marks]

OR

B) Write a program in the GO language program to open a file in READ only mode. [20 Marks]

Q2. a. Draw block diagram /pin diagram of Raspberry-Pi/ Beagle board /Arduino Uno board interfacing with IR Sensor/Temperature Sensor/Camera. [10 Marks]
(Internal Examiner assign any one option for board and interface device and respective interface programming option)

b. WAP in python/C++ language to turn ON/OFF buzzer.

c. Write down the observations on Input and Output.

d. Write down the Result and Conclusion.

Q3. Viva [5 Marks]

Q4. Internal Assessment [15 Marks]

Savitribai Phule Pune University

T.Y. B.C.A. (Science) (Semester-VI) Practical Examination

BCA 367: DSE V Lab (Programming in GO and IoT)

Duration: 3Hrs. **Max Marks: 35+15=50**

Q1. A) Write a program in Go language to add or append content at the end of a text file. [20 Marks]

OR

B) Write a program in Go language how to create a channel and illustrate how to close a channel using for range loop and close function. [20 Marks]

Q2. a. Draw block diagram /pin diagram of Raspberry-Pi/ Beagle board /Arduino Uno board interfacing with IR Sensor/Temperature Sensor/Camera. [10 Marks]
(Internal Examiner assign any one option for board and interface device and respective interface programming option)

b. WAP in python/C++ language to toggle two LED's.

c. Write down the observations on Input and Output.

d. Write down the Result and Conclusion.

Q3. Viva [5 Marks]

Q4. Internal Assessment [15 Marks]

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Savitribai Phule Pune University

T.Y. B.C.A (Science)

Semester – VI

C.B.C.S 2019 Pattern

BCA368

DSE VI

(Project Lab)

Savitribai Phule Pune University

T.Y.B.C.A. (Science) (Semester-VI) Project Examination

BCA 368: DSE VI Project Lab

Duration: 3Hrs. **Max Marks: 35+15=50**

Project Implementation Guidelines:

1. Students shall choose any topic for project work in consultation with project guide, project In-charge and head of the department.
2. The students shall work on a Project in a group of not more than three students.
3. Students are expected to work on the chosen project during the entire semester.
4. Students shall undertake application oriented/web-based/database-oriented/research basedwork.
5. Students shall successfully implement the chosen work. Only a hypothetical/theoretical study shall not be accepted.
6. Students shall choose any appropriate programming language/platform, computational techniques and tools in consultation with the guide, In-charge and the head of thedepartment.
7. The faculty members from affiliated college shall act as a project guide for each project group with equal distribution of groups amongst each eligible faculty.
8. The guide shall track and monitor the project progress on a weekly basis by considering the workload of 4 laboratory hours per week.
9. The project work shall be evaluated based on the novelty of the topic, scope of the work, relevance to computer science, adoption of emerging techniques/technologies and its real- world application etc.
10. Students shall prepare a project report with the following contents:
    a) Title Page
    b) Certificate
    c) Index Page detailing description of the following with their sub sections:-
    - Title: A suitable title giving the idea about what work is proposed.
    - Introduction: An introduction to the topic giving proper background of the topic.
    - Requirement Specification: Specify Software/hardware/data requirements.
    - System Design details: Methodology/Architecture/UML/DFD/Algorithms/ protocolsused (whichever is applicable)
    - System Implementation: Code implementation
    - Results: Test Cases/Tables/Figures/Graphs/Screen shots/Reports etc.
    - Conclusion and Future Scope: Specify the Final conclusion and future scope
    - References: Books, web links, research articles etc.
11. The Project report should be prepared in a spiral bound form with adequate number of copies. Copy shall be submitted to the guide and college for the records.
12. The Project work and report shall be certified by the concerned Project guide and Head of the department.
13. Students shall make a presentation of working project and will be evaluated as per the Project evaluation scheme as detailed below:

Assignments using Gantt Project tools

- Students are advised to carry out the following assignments w.r.t. their chosen project topics

1 Create Project Plan

- Specify project name and start and finish dates.
- Identify and define project tasks.
- Define duration for each project task.
- Define milestones in the plans
- Define dependency between tasks
- Define project calendar.
- Define project resources and specify resource type
- Assign resources against each task and baseline the project plan

2 **Execute and Monitor Project Plan**

- Update %Complete with current task status.
- Review the status of each task.
- Compare Planned vs Actual Status
- Review the status of Critical Path
- Review resources assignation status

3 **Generate Dashboard and Reports**

- **Dashboard**
  - Project Overview
  - Cost Overview
  - Upcoming Tasks
- **Resource Reports**
  - Over-allocated Resources
  - Resource Overview
- **Cost Reports**
  - Earned Value Report
  - Resource Cost Overview
  - Task-Cost Overview
- **Progress Reports**
  - Critical Tasks
  - Milestone Report
  - Slipping Tasks

Evaluation Scheme

I. Continuous Evaluation, Progress Report: 15 marks
II. End Semester Examination in the form of presentation/demonstration and viva: 35 marks

Description	Marks
Presentation & Project Report	15
Demonstration of the Project	15
Viva	05
Total	**35**

Note: Submission of Certified Project Report is mandatory for appearing the Practical Examination (Project).