No. of Printed Page : 1

SET - 1

BACHELOR IN COMPUTER APPLICATIONS (BCA)

Term-End Practical Examination

02612

June, 2013

BCSL-045 : INTRODUCTION TO ALGORITHM DESIGN LAB

Time allowed : 1 hour *Maximum Marks : 50*

Note : *There are **two** questions carrying **20** marks each.*
*Each question is **compulsory**.*
*All programs are to be written in C-language. **10** marks are for **viva-voce**.*

1. Write a program to generate 10 Fibonacci series and calculate complexity of each statement and total complexity of a program. **20**

2. Write a program to find minimum of 10 numbers and calculate time complexity of each statement and total complexity of a program. **20**

No. of Printed Page : 1

SET - 2

BACHELOR IN COMPUTER APPLICATIONS (BCA)

Term-End Practical Examination

00138

June, 2013

BCSL-045 : INTRODUCTION TO ALGORITHM DESIGN LAB

Time allowed : 1 hour *Maximum Marks : 50*

Note : *There are **two** questions carrying **20** marks each.*
***10** marks are for **viva-voce**.*
Programs are to be written in C-language.

1. Write a program to calculate a factorial of any number and calculate complexity of each statement of a program. **20**

2. For the following program, find the time complexity **20**

```
for (i = 0 ; i < n ; i++)
printf("First loop") ;
```

No. of Printed Page : 1

SET - 3

BACHELOR IN COMPUTER APPLICATIONS (BCA)

Term-End Practical Examination

00135

June, 2013

BCSL-045 : INTRODUCTION TO ALGORITHM DESIGN LAB

Time allowed : 1 hour *Maximum Marks : 50*

Note : *There are **two** questions, each carrying **20** marks each.*
***10** marks are for **viva-voce**.*
***All** programs are to be written in C-language.*

1. Write a linear search program and do comparison for the worst case. **20**

2. For the following program fragment find the complexity **20**
for ($i = 0 ; i < n ; i++$)

No. of Printed Page : 1

SET - 4

BACHELOR IN COMPUTER APPLICATIONS (BCA)

Term-End Practical Examination

01313

June, 2013

BCSL-045 : INTRODUCTION TO ALGORITHM DESIGN LAB

Time allowed : 1 hour *Maximum Marks : 50*

Note : *There are **two** questions, each carrying **20** marks.*
***10** marks are for **viva-voce**.*
Programs are to be written in C-language.

1. Write a program to perform linear search and write run time complexity of each statement. **20**

2. Find the time complexity of the following program fragment **20**

```
for (i = 0 ; i < n ; i++)
for (j = 0 ; j < n ; j++)
for (k = 0 ; k < n ; k++)
printf('inner looping statement)
```

No. of Printed Page : 1

SET - 1

BACHELOR IN COMPUTER APPLICATIONS (BCA)

Term-End Practical Examination

00821

December, 2013

BCSL-045 : INTRODUCTION TO ALGORITHM DESIGN LAB

Time allowed : 1 hour *Maximum Marks : 50*

Note : *There are **two** questions carrying **20** marks each.*
*Each question is **compulsory**.*
*All programs are to be written in C-language. **10** marks are for **viva-voce**.*

1. Write a program to calculate a factorial of a number and calculate total number of comparison operations and multiplication operations. Also calculate complexity of a program. **20**

2. Write a program to find maximum of 10 numbers stored in an array and calculate a total number of comparison operations and complexity of the program. **20**

No. of Printed Page : 1

SET - 2

BACHELOR IN COMPUTER APPLICATIONS (BCA)

Term-End Practical Examination

01864

December, 2013

BCSL-045 : INTRODUCTION TO ALGORITHM DESIGN LAB

Time allowed : 1 hour *Maximum Marks : 50*

Note : *There are **two** questions carrying **20** marks each.*
***10** marks are for **viva-voce**.*
Programs are to be written in C-language.

1. Write a program to take average of 10 numbers stored in an array. Calculate total number of comparison and addition operations. Also calculate complexity of a program. **20**

2. For the following program, find the time complexity. **20**

```
For  (i=0; i<n; i++)
For  (j=0; j<n; j++)
print f ("first+second loop");
```

No. of Printed Page : 1

SET - 3

BACHELOR IN COMPUTER APPLICATIONS (BCA)

Term-End Practical Examination

00014

December, 2013

BCSL-045 : INTRODUCTION TO ALGORITHM DESIGN LAB

Time allowed : 1 hour *Maximum Marks : 50*

Note : *There are **two** compulsory questions, each question carrying **20** marks each.*
***10** marks are for **viva-voce**.*
***All** programs are to be written in C-language.*

1. Write a program to organize data stored in an array in ascending order and calculate a number of comparison operations for best case and worst case. **20**

2. Write a program to accept three numbers from the keyboard and find the maximum number. Calculate the number of comparison operations. **20**

No. of Printed Page : **1**

SET - 4

BACHELOR IN COMPUTER APPLICATIONS (BCA)

Term-End Practical Examination

OCT 14

December, 2013

BCSL-045 : INTRODUCTION TO ALGORITHM DESIGN LAB

Time allowed : 1 hour *Maximum Marks : 50*

Note : *There are **two** questions, each carrying **20** marks.*
***10** marks are for **viva-voce**.*
Programs are to be written in C-language.

1. Write a program to reverse a string and calculate its time complexity. **20**

2. Sort the data stored in an array in ascending order using selection sort algorithm and calculate total number of comparison operations. **20**

No. of Printed Page : 1

SET - 1

BACHELOR IN COMPUTER APPLICATIONS (BCA)

Term-End Practical Examination

01391

June, 2014

BCSL-045 : INTRODUCTION TO ALGORITHM DESIGN LAB

Time allowed : 1 hour *Maximum Marks : 50*

Note : *(i) There are two questions carrying **20** marks each.*
*(ii) Each question is **compulsory**.*
*(iii) **All** programs are to be written in C-language.*
*(iv) **10** marks are for **viva-voce**.*

1. Write a program to generate Fibonacci series of 10 numbers and calculate total number of addition operations and how many times the loop will execute ? **20**

2. Write a program to compute GCD (Greatest Common Divisor). Show running time of each statement and total running time of the program. **20**

No. of Printed Page : 1

SET - 2

BACHELOR IN COMPUTER APPLICATIONS (BCA)

Term-End Practical Examination

01097

June, 2014

BCSL-045 : INTRODUCTION TO ALGORITHM DESIGN LAB

Time allowed : 1 hour *Maximum Marks : 50*

Note : *(i) There are **two compulsory** questions.*
*(ii) Each question carry **20** marks.*
*(iii) **10** marks are for **viva-voce**.*
(iv) Programs are to be written in C-language.

1. Write a program to find out both the largest and the smallest integer in an array. Also count how many comparison operations are involved in each. **20**

2. For the following program calculate the time complexity : **20**

```
for (i = 0; i<n; i + +)
for (j = 0; j<n; j + +)
for (k = 0; k<n; k + +)
print f("first + second + third loop");
```

No. of Printed Page : 1

SET - 3

BACHELOR IN COMPUTER APPLICATIONS (BCA)

Term-End Practical Examination

00835

June, 2014

BCSL-045 : INTRODUCTION TO ALGORITHM DESIGN LAB

Time allowed : 1 hour *Maximum Marks : 50*

Note : *(i) There are **two compulsory** questions.*
*(ii) Each question carry **20** marks each.*
*(iii) **10** marks are for **viva-voce**.*
*(iv) **All** programs are to be written in C-language.*

1. Write a program to organize data stored in an array in descending order and calculate a number of comparison operations for best case and worst case. **20**

2. Write a program to find the length of a given string. Calculate total number of addition and comparison operations. **20**

No. of Printed Page : 1

SET - 4

BACHELOR IN COMPUTER APPLICATIONS (BCA)

Term-End Practical Examination

00887

June, 2014

BCSL-045 : INTRODUCTION TO ALGORITHM DESIGN LAB

Time allowed : 1 hour *Maximum Marks : 50*

Note : *(i) There are **two compulsory** questions.*
*(ii) Each question carries **20** marks.*
*(iii) **10** marks are for **viva-voce**.*
(iv) Programs are to be written in C-language.

1. Write a program to reverse a string and calculate : **20**
   (a) Total number of swap operations
   (b) How many times the loop will execute

2. Sort the data stored in an array in ascending order using selection sort algorithm and calculate total number of comparison operations. **20**

No. of Printed Pages : 1

BCSL-045(P)/S1

BACHELOR OF COMPUTER APPLICATIONS (Revised)
(BCA)
Term-End Practical Examination
December, 2014

02863

BCSL-045(P)/S1 : INTRODUCTION TO ALGORITHM DESIGN LAB

Time : 1 Hour *Maximum Marks : 50*

Note : *(i) There are two **compulsory** questions.*

(ii) Each question carries 20 marks.

(iii) 10 marks are for viva-voce.

(iv) Programs are to be written in C-language.

1. Write a program to compute x^n, where both x and n are integer numbers. Calculate the total running time of the program and how many times the loop will execute. *20*

2. Write a program to find the maximum of the list 5, 10, 15, 4, 3, 20, 25. How many times will the loop execute ? Calculate the total number of comparison operations in the program. *20*

No. of Printed Pages : 1

BCSL-045(P)/S2

BACHELOR OF COMPUTER APPLICATIONS (Revised)
(BCA)
Term-End Practical Examination
December, 2014

01774

BCSL-045(P)/S2 : INTRODUCTION TO ALGORITHM DESIGN LAB

Time : 1 Hour *Maximum Marks : 50*

Note : *(i) There are two **compulsory** questions.*

(ii) Each question carries 20 marks.

(iii) 10 marks are for viva-voce.

(iv) Programs are to be written in C-language.

1. Write a program that finds the sum of all the integers in an array. Calculate the total time complexity of a program. *20*

2. Write a program to do sorting of integer numbers through bubble sort algorithm and calculate the worst time complexity. *20*

No. of Printed Pages : 1

BCSL-045(P)/S3

BACHELOR OF COMPUTER APPLICATIONS (Revised)
(BCA)

00704

Term-End Practical Examination
December, 2014

BCSL-045(P)/S3 : INTRODUCTION TO ALGORITHM DESIGN LAB

Time : 1 Hour *Maximum Marks : 50*

Note : *(i) There are two **compulsory** questions.*

(ii) Each question carries 20 marks.

(iii) 10 marks are for viva-voce.

(iv) Programs are to be written in C-language.

---

1. Write a program and determine the number of comparisons required to locate an element in a list of n items with a linear search. How many times will the loop execute ? *20*

2. Write a program to organize the data stored in an array in ascending order through selection sort algorithm and calculate the number of comparison operators for best case and worst case. *20*

No. of Printed Pages : 1

BCSL-045(P)/S4

BACHELOR OF COMPUTER APPLICATIONS (Revised)
(BCA)
Term-End Practical Examination
December, 2014

00824

BCSL-045(P)/S4 : INTRODUCTION TO ALGORITHM DESIGN LAB

Time : 1 Hour *Maximum Marks : 50*

Note : *(i) There are two **compulsory** questions.*

(ii) Each question carries 20 marks.

(iii) 10 marks are for viva-voce.

(iv) Programs are to be written in C-language.

1. Write a program to check whether a string is a palindrome or not and calculate *20*

(a) the total number of swap operations.

(b) how many times the loop will execute.

2. Write a program to find the smallest integer and finite sequence of natural numbers and calculate the total time complexity. *20*

No. of Printed Pages : 1

BCSL-045(P)/S1

BACHELOR OF COMPUTER APPLICATIONS (Revised)

(BCA)

02023

Term-End Practical Examination

June, 2015

BCSL-045(P)/S1 : INTRODUCTION TO ALGORITHM DESIGN LAB

Time : 1 Hour *Maximum Marks : 50*

Note : *(i) There are **two compulsory** questions.*

(ii) Each question carries 20 marks.

(iii) Remaining 10 marks are for viva-voce.

(iv) Programs are to be written in 'C' language.

1. Implement a binary search algorithm for searching for an item 16 from the following sorted array A with 10 elements :

2 4 8 12 16 25 30 32 40 50

Calculate the number of comparison operations, divide operation and total time taken to execute a program. *20*

2. Write a program to combine two strings and calculate the number of times the loop will execute. *20*

No. of Printed Pages : 1

BCSL-045(P)/S2

BACHELOR OF COMPUTER APPLICATIONS (Revised)
(BCA)

00063

Term-End Practical Examination

June, 2015

BCSL-045(P)/S2 : INTRODUCTION TO ALGORITHM DESIGN LAB

Time : 1 Hour *Maximum Marks : 50*

Note : *(i) There are **two compulsory** questions.*

(ii) Each question carries 20 marks.

(iii) Remaining 10 marks are for viva-voce.

(iv) Programs are to be written in 'C' language.

1. Implement a selection sort algorithm to sort an array of 10 integer numbers
25 18 12 14 3 30 35 17 4 11
Calculate the number of exchange and comparison operations. *20*

2. Write a program to count the number of times an integer number 10 has occurred in the following array : *20*

5, 10, 15, 2, 10, 8, 7, 10, 11

No. of Printed Pages : 1

BCSL-045(P)/S3

BACHELOR OF COMPUTER APPLICATIONS (Revised)
(BCA)
Term-End Practical Examination
00653
June, 2015

BCSL-045(P)/S3 : INTRODUCTION TO ALGORITHM DESIGN LAB

Time : 1 Hour *Maximum Marks : 50*

Note : *(i)* *There are **two compulsory** questions.*

(ii) *Each question carries 20 marks.*

(iii) *Remaining 10 marks are for viva-voce.*

(iv) *Programs are to be written in 'C' language.*

1. Write a program to find the m smallest numbers in a list of n numbers. Calculate the number of times the loop and comparison operations will execute. *20*

2. Given an array of n distinct integers, determine the location of an integer in an array using a linear search. Calculate the number of times a comparison operation will execute. *20*

No. of Printed Pages : 1

BCSL-045(P)/S4

BACHELOR OF COMPUTER APPLICATIONS (Revised)

(BCA)

Term-End Practical Examination

00363

June, 2015

BCSL-045(P)/S4 : INTRODUCTION TO ALGORITHM DESIGN LAB

Time : 1 Hour *Maximum Marks : 50*

Note : *(i) There are **two compulsory** questions.*

(ii) Each question carries 20 marks.

(iii) Remaining 10 marks are for viva-voce.

(iv) Programs are to be written in 'C' language.

1. Write a program to multiply two matrices of order 4×4 and calculate total number of comparison, assignment, multiplication and addition operations. *20*

2. Write a program to compute x^n, where both x and n are integer numbers. Calculate how many times the loop will execute. *20*

No. of Printed Pages : 1

BCSL-045(P)/S1

BACHELOR OF COMPUTER APPLICATIONS (Revised)

(BCA)

Term-End Practical Examination

00999

December, 2015

BCSL-045(P)/S1 : INTRODUCTION TO ALGORITHM DESIGN LAB

Time : 1 Hour *Maximum Marks : 50*

Note : *(i)* *There are two **compulsory** questions.*

(ii) *Each question carries 20 marks.*

(iii) *Remaining 10 marks are for viva-voce.*

(iv) *Programs are to be written in 'C' language.*

---

1. Implement a bubble sort algorithm for sorting the following list of numbers :

27 5 10 8 16 2 37

Calculate how many times the loop will execute. Count the number of comparison operations needed in this program. *20*

2. Write a program to calculate the length of a string. Calculate the total time taken to execute this program. *20*

No. of Printed Pages : 1

BCSL-045(P)/S2

BACHELOR OF COMPUTER APPLICATIONS (Revised)

(BCA)

00159

Term-End Practical Examination

December 2015

BCSL-045(P)/S2 : INTRODUCTION TO ALGORITHM DESIGN LAB

Time : 1 Hour *Maximum Marks : 50*

Note : *(i)* *There are two **compulsory** questions.*

(ii) *Each question carries 20 marks.*

(iii) *Remaining 10 marks are for viva-voce.*

(iv) *Programs are to be written in 'C' language.*

1. Write a program that finds the sum of all the integers in an array. Calculate the total time taken to execute the program. *20*

2. Write a program to generate 10 Fibonacci numbers and calculate the time taken to execute each statement of the program and the total time. How many times will the loop execute ? *20*

No. of Printed Pages : 1

BCSL-045(P)/S3

BACHELOR OF COMPUTER APPLICATIONS (Revised)
(BCA)
Term-End Practical Examination
December, 2015

00909

BCSL-045(P)/S3 : INTRODUCTION TO ALGORITHM DESIGN LAB

Time : 1 Hour *Maximum Marks : 50*

Note : *(i) There are two **compulsory** questions.*

(ii) Each question carries 20 marks.

(iii) Remaining 10 marks are for viva-voce.

(iv) Programs are to be written in 'C' language.

1. Implement a selection sort algorithm to sort an array of 10 integer numbers :

9 45 35 15 20 5 4 10 19 27

Calculate the number of exchange and comparison operations in best case and worst case. *20*

2. Write a program to reverse a string and count how many times the exchange operation and the loop will execute. *20*

No. of Printed Pages : 1

BCSL-045(P)/S4

BACHELOR OF COMPUTER APPLICATIONS (Revised)
(BCA)
Term-End Practical Examination
December, 2015

00999

BCSL-045(P)/S4 : INTRODUCTION TO ALGORITHM DESIGN LAB

Time : 1 Hour *Maximum Marks : 50*

Note : *(i) There are two **compulsory** questions.*

(ii) Each question carries 20 marks.

(iii) Remaining 10 marks are for viva-voce.

(iv) Programs are to be written in 'C' language.

1. Given an ordered list of n integers and an integer x, find the number of comparisons used to determine the position of an integer in the list using a binary search. *20*

2. Write a program to multiply two matrices of order 4×4 and calculate the total number of assignment, multiplication and addition operations. *20*

No. of Printed Pages : 1

BCSL-045(P)/S1

BACHELOR OF COMPUTER APPLICATIONS (Revised)

(BCA)

02008

Term-End Practical Examination

June, 2016

BCSL-045(P)/S1 : INTRODUCTION TO ALGORITHM DESIGN LAB

Time : 1 Hour *Maximum Marks : 50*

Note : *(i) There are two **compulsory** questions.*

(ii) Each question carries 20 marks.

(iii) 10 marks are for viva-voce.

(iv) All programs are to be written in C-language.

---

1. Implement a Selection Sort algorithm for sorting the following list of numbers :

17 7 8 15 6 3

Calculate how many times the loop will execute. Count the number of comparison operations made in this program. *20*

2. Write a program to calculate the mean value of a set of six integer numbers stored in an array and calculate how many times the loop and addition operations will execute.

The mean of a set of integers is the sum of integers divided by the number of integers in the set. *20*

No. of Printed Pages : 1

BCSL-045(P)/S2

BACHELOR OF COMPUTER APPLICATIONS (Revised)

(BCA)

00828

Term-End Practical Examination

June, 2016

BCSL-045(P)/S2 : INTRODUCTION TO ALGORITHM DESIGN LAB

Time : 1 Hour *Maximum Marks : 50*

Note : *(i) There are two **compulsory** questions.*

(ii) Each question carries 20 marks.

(iii) 10 marks are for viva-voce.

(iv) All programs are to be written in C-language.

1. Write a program to search for a number 10 in the following sequence of numbers in an array :

2, 4, 6, 8, 10, 12, 16

Calculate the total number of comparison operations in the program. *20*

2. Write a program that finds the sum of all ten numbers stored in an array. How many times will the addition operation execute ? *20*

No. of Printed Pages : 1

BCSL-045(P)/S3

BACHELOR OF COMPUTER APPLICATIONS (Revised)

(BCA)

00408

Term-End Practical Examination

June, 2016

BCSL-045(P)/S3 : INTRODUCTION TO ALGORITHM DESIGN LAB

Time : 1 Hour *Maximum Marks : 50*

Note : *(i) There are two **compulsory** questions.*

(ii) Each question carries 20 marks.

(iii) 10 marks are for viva-voce.

(iv) All programs are to be written in C-language.

1. Implement insertion sort algorithm to sort an array of 10 integer numbers :

6 20 30 10 15 4 3 17 37 7

Calculate the number of comparison operations executed. *20*

2. Write a program that finds the sum of the square of each integer number stored in an array of size 10. Calculate how many times the assignment operation will execute. *20*

No. of Printed Pages : 1

BCSL-045(P)/S4

BACHELOR OF COMPUTER APPLICATIONS (Revised)

(BCA)

00256

Term-End Practical Examination

June, 2016

BCSL-045(P)/S4 : INTRODUCTION TO ALGORITHM DESIGN LAB

Time : 1 Hour *Maximum Marks : 50*

Note : *(i) There are two **compulsory** questions.*

(ii) Each question carries 20 marks.

(iii) 10 marks are for viva-voce.

(iv) All programs are to be written in C-language.

1. Write a program to find the maximum of the following list :

5 7 10 11 8 25 17

How many times will the loop execute ? *20*

2. Write a program to multiply two matrices of order 4×4 and calculate the total number of multiplication and addition operations. How many times will the loop execute ? *20*

No. of Printed Pages : 1

BCSL-045(P)/S1

BACHELOR OF COMPUTER APPLICATIONS (Revised)

(BCA)

02403

Term-End Practical Examination

December, 2016

BCSL-045(P)/S1 : INTRODUCTION TO ALGORITHM DESIGN LAB

Time : 1 Hour *Maximum Marks : 50*

Note : *(i)* *There are two **compulsory** questions.*

(ii) *Each question carries 20 marks.*

(iii) *Rest 10 marks are for viva-voce.*

(iv) *All programs are to be written in 'C' language.*

---

1. Write a program that produces the median of a set of five integers (unsorted). [The median of a set of integers is the middle element in the list when these integers are listed in the order of increasing numbers]. How much time will the program take to execute ? *20*

2. Use the insertion sort to sort the following list showing the lists obtained at each step :

15 10 2 4 7 8

How many comparisons does the insertion sort use in the above list ? *20*

No. of Printed Pages : 1

BCSL-045(P)/S2

BACHELOR OF COMPUTER APPLICATIONS (Revised)
(BCA)

01103

Term-End Practical Examination
December, 2016

BCSL-045(P)/S2 : INTRODUCTION TO ALGORITHM DESIGN LAB

Time : 1 Hour *Maximum Marks : 50*

Note : *(i) There are two **compulsory** questions.*

(ii) Each question carries 20 marks.

(iii) Rest 10 marks are for viva-voce.

(iv) All programs are to be written in 'C' language.

1. Write a program to search for a number 7 in the following sequence of numbers in an array using Linear search :

2, 3, 5, 7, 12, 15, 17

Calculate the total number of comparison operations in the program. How many times will the loop execute ? *20*

2. Write a program that takes as input a list of n different integers and find the location of the smallest even integer in the list or return 0 (zero) otherwise. *20*

No. of Printed Pages : 1

BCSL-045(P)/S3

BACHELOR OF COMPUTER APPLICATIONS (Revised)

(BCA)

00813

Term-End Practical Examination

December, 2016

BCSL-045(P)/S3 : INTRODUCTION TO ALGORITHM DESIGN LAB

Time : 1 Hour *Maximum Marks : 50*

Note : *(i) There are two **compulsory** questions.*

(ii) Each question carries 20 marks.

(iii) Rest 10 marks are for viva-voce.

(iv) All programs are to be written in 'C' language.

---

1. Implement the bubble sort algorithm to sort an array of 10 integer numbers showing the lists obtained at each step :

16 10 20 5 13 4 3 7 27 15

How many times will the loop and the assignment operations execute ? *20*

2. Write a program to reverse a given string accepted through a command line argument. How many times will the loop and the assignment operations take place ? *20*

No. of Printed Pages : 1

BCSL-045(P)/S4

BACHELOR OF COMPUTER APPLICATIONS (Revised)

(BCA)

Term-End Practical Examination

00843

December, 2016

BCSL-045(P)/S4 : INTRODUCTION TO ALGORITHM DESIGN LAB

Time : 1 Hour *Maximum Marks : 50*

Note : *(i) There are two **compulsory** questions.*

(ii) Each question carries 20 marks.

(iii) Rest 10 marks are for viva-voce.

(iv) All programs are to be written in 'C' language.

1. Write a program to sort the following list using the selection sort algorithm showing the intermediate results (lists) at each step :

5 3 10 9 8 16 25

How many times will the loop and the comparison operations execute ? *20*

2. Write a program to find out the second largest and the second lowest numbers in the list. How many times will the comparison operation execute ? *20*

No. of Printed Pages : 1

BCSL-045(P)/S1

BACHELOR OF COMPUTER APPLICATIONS (Revised)
(BCA)
Term-End Practical Examination
02038
June, 2017

BCSL-045(P)/S1 : INTRODUCTION TO ALGORITHM DESIGN LAB

Time : 1 Hour *Maximum Marks : 50*

Note : *(i) There are two **compulsory** questions.*

(ii) Each question carries 20 marks.

(iii) The rest 10 marks are for viva-voce.

(iv) All programs are to be written in 'C' language.

---

1. Write a program to generate 10 numbers in Fibonacci series and calculate how many times the loop, addition and assignment operations will execute. *20*

2. Write a program to sort the following list of numbers using Bubble Sort algorithm :

15 27 5 2 85 45 30

Calculate

(a) how many times the outer loop and inner loop will execute, and

(b) how many exchange operations will execute. *20*

No. of Printed Pages : 1

BCSL-045(P)/S2

BACHELOR OF COMPUTER APPLICATIONS (Revised)

(BCA)

01635

Term-End Practical Examination

June, 2017

BCSL-045(P)/S2 : INTRODUCTION TO ALGORITHM DESIGN LAB

Time : 1 Hour *Maximum Marks : 50*

Note : *(i) There are two **compulsory** questions.*

(ii) Each question carries 20 marks.

(iii) The rest 10 marks are for viva-voce.

(iv) All programs are to be written in 'C' language.

---

1. Write a program to compute a^n by right to left binary exponentiation and calculate the number of times the loop will execute. Both a and n are integer numbers. *20*

2. Write a program that finds the sum of 10 integers in an array. How many times will the loop and the addition operations execute ? *20*

No. of Printed Pages : 1

BCSL-045(P)/S3

BACHELOR OF COMPUTER APPLICATIONS (Revised)
(BCA)
Term-End Practical Examination
June, 2017

00710

BCSL-045(P)/S3 : INTRODUCTION TO ALGORITHM DESIGN LAB

Time : 1 Hour *Maximum Marks : 50*

Note : *(i) There are two **compulsory** questions.*

(ii) Each question carries 20 marks.

(iii) The rest 10 marks are for viva-voce.

(iv) All programs are to be written in 'C' language.

1. Write a program to calculate the length of a string and calculate the number of times the loop and addition operations will execute. *20*

2. Use Insertion Sort algorithm to sort the following list showing the list obtained at each step :

20 10 5 7 3 30 40 15

Calculate how many swap operations and the loop will execute. *20*

No. of Printed Pages : 1

BCSL-045(P)/S4

BACHELOR OF COMPUTER APPLICATIONS (Revised)
(BCA)
Term-End Practical Examination
00252
June, 2017

BCSL-045(P)/S4 : INTRODUCTION TO ALGORITHM DESIGN LAB

Time : 1 Hour *Maximum Marks : 50*

Note : *(i)* *There are two **compulsory** questions.*

(ii) *Each question carries 20 marks.*

(iii) *The rest 10 marks are for viva-voce.*

(iv) *All programs are to be written in 'C' language.*

1. Implement the Selection Sort algorithm to sort an array of 10 integers showing the list obtained at each step :

25 5 10 4 15 20 18 12 14 7

How many times will the inner loop and outer loop execute ? *20*

2. Given a list of n distinct integers, determine the position of an integer in the list using a binary search :

5 10 15 20 22 27 30 35

Search for 22. *20*

No. of Printed Pages : 1

BCSL-045(P)/S1

BACHELOR OF COMPUTER APPLICATIONS (Revised)
(BCA)

00592

Term-End Practical Examination

December, 2017

BCSL-045(P)/S1 : INTRODUCTION TO ALGORITHM DESIGN LAB

Time : 1 Hour *Maximum Marks : 50*

Note : *(i) There are two **compulsory** questions.*

(ii) Each question carries 20 marks.

(iii) The remaining 10 marks are for viva-voce.

(iv) All programs are to be written in 'C' language.

1. Write a program to evaluate a polynomial using Horner's rule and count how many times the loop will execute. *20*

2. Write a 'C' program to perform linear search and apply it to the following set of integers to search for a number 28 :

   9 15 22 5 4 25 28

   Calculate the number of comparison operations required. *20*

No. of Printed Pages : 1

BCSL-045(P)/S2

BACHELOR OF COMPUTER APPLICATIONS (Revised)
(BCA)

Term-End Practical Examination

01062

December, 2017

BCSL-045(P)/S2 : INTRODUCTION TO ALGORITHM DESIGN LAB

Time : 1 Hour *Maximum Marks : 50*

Note : *(i) There are two **compulsory** questions.*

(ii) Each question carries 20 marks.

(iii) The remaining 10 marks are for viva-voce.

(iv) All programs are to be written in 'C' language.

---

1. Write and test a program to find the largest number in an array. How many times will the loop and comparison operations execute ? *20*

2. Write and test a program in 'C' language to sort the following array using Bubble Sort. Calculate the total number of comparison and assignment operations to execute the program. *20*

55 45 40 10 15 25 5

No. of Printed Pages : 1

BCSL-045(P)/S3

BACHELOR OF COMPUTER APPLICATIONS (Revised)
(BCA)

Term-End Practical Examination

00852

December, 2017

BCSL-045(P)/S3 : INTRODUCTION TO ALGORITHM DESIGN LAB

Time : 1 Hour *Maximum Marks : 50*

Note : *(i) There are two **compulsory** questions.*

(ii) Each question carries 20 marks.

(iii) The remaining 10 marks are for viva-voce.

(iv) All programs are to be written in 'C' language.

---

1. Write a program to check whether a string is a palindrome or not and calculate

(a) the total number of swap operations, and

(b) how many times the loop will execute. *20*

2. Write a 'C' program to find multiplication of two matrices of order 3×3 and find the total number of assignment, multiplication and addition operations. *20*

No. of Printed Pages : 1

BCSL-045(P)/S4

BACHELOR OF COMPUTER APPLICATIONS (Revised)
(BCA)

Term-End Practical Examination

00042

December, 2017

BCSL-045(P)/S4 : INTRODUCTION TO ALGORITHM DESIGN LAB

Time : 1 Hour *Maximum Marks : 50*

Note : *(i) There are two **compulsory** questions.*

(ii) Each question carries 20 marks.

(iii) The remaining 10 marks are for viva-voce.

(iv) All programs are to be written in 'C' language.

---

1. Write a program to copy a string to another string. Count how many times the assignment operations and loop will execute. *20*

2. Implement the Insertion Sort algorithm to sort the following array :

30 15 10 40 5 25 17 27 12 8

How many times will the inner loop and the outer loop execute ? *20*

No. of Printed Pages : 1

BCSL-045(P)/S1

BACHELOR OF COMPUTER APPLICATIONS (Revised)

(BCA)

02602

Term-End Practical Examination

June, 2018

BCSL-045(P)/S1 : INTRODUCTION TO ALGORITHM DESIGN LAB

Time : 1 Hour *Maximum Marks : 50*

Note : *(i) There are two **compulsory** questions.*

(ii) Each question carries 20 marks.

(iii) The rest 10 marks are for viva-voce.

(iv) All programs are to be written in 'C' language.

---

1. Write a program to calculate the length of a string. Calculate the number of times the loop will execute and the number of comparison operations required in this program. *20*

2. Implement the Bubble Sort algorithm to sort an array of 10 integer numbers showing all the intermediate steps.

25 15 10 5 4 8 16 13 7 9

How many times will the inner and outer loops execute ? *20*

No. of Printed Pages : 1

BCSL-045(P)/S2

BACHELOR OF COMPUTER APPLICATIONS (Revised)
(BCA)
Term-End Practical Examination
June, 2018

00405

BCSL-045(P)/S2 : INTRODUCTION TO ALGORITHM DESIGN LAB

Time : 1 Hour *Maximum Marks : 50*

Note : *(i) There are two **compulsory** questions.*

(ii) Each question carries 20 marks.

(iii) The rest 10 marks are for viva-voce.

(iv) All programs are to be written in 'C' language.

---

1. Write a program to compute a^n by left to right binary exponentiation method and count how many times the loops will execute ? *20*

2. Write a program to find the largest number in an array of 15 numbers. How many times will the comparison operations be required ? *20*

No. of Printed Pages : 1

BCSL-045(P)/S3

BACHELOR OF COMPUTER APPLICATIONS (Revised)
(BCA)
Term-End Practical Examination
00805

June, 2018

BCSL-045(P)/S3 : INTRODUCTION TO ALGORITHM DESIGN LAB

Time : 1 Hour *Maximum Marks : 50*

Note : *(i)* *There are two **compulsory** questions.*

(ii) *Each question carries 20 marks.*

(iii) *The rest 10 marks are for viva-voce.*

(iv) *All programs are to be written in 'C' language.*

---

1. Write a program to multiply two matrices of order of 3×3 and calculate the total number of comparison, assignment, multiplication and addition operation. *20*

2. Write a program and determine the number of comparisons required to locate an element in a list of n items with a linear search. How many times will the comparison operations execute ? *20*

No. of Printed Pages : 1

BCSL-045(P)/S4

BACHELOR OF COMPUTER APPLICATIONS (Revised)

(BCA)

Term-End Practical Examination

00699

June, 2018

BCSL-045(P)/S4 : INTRODUCTION TO ALGORITHM DESIGN LAB

Time : 1 Hour *Maximum Marks : 50*

Note : *(i) There are two **compulsory** questions.*

(ii) Each question carries 20 marks.

(iii) The rest 10 marks are for viva-voce.

(iv) All programs are to be written in 'C' language.

1. Use the Insertion Sort to sort the following list showing all the intermediate steps :

25 15 5 10 12 7 9 18

How many swap operations will the loop execute ? *20*

2. Write a program to reverse a given string. How many times will the loop and the assignment operations execute ? *20*

No. of Printed Pages : 2 197333 **BCSL-045/S1**

Bachelor of Computer Application (Revised) (BCA)

Term-End Examination

December, 2018

INTRODUCTION TO ALGORITHM DESIGN LAB

Time : 1 Hour *Maximum Marks : 50*

Note : (i) There are ***two*** compulsory questions.

(ii) Each question carries 20 marks.

(iii) The rest 10 marks are for viva-voce.

(iv) All programs are to be written in 'C' language.

---

1. Write a program to combine any two given strings. Calculate the number of times the loop will execute and the number of comparison operations required in this program. 20

2. Implement the selection sort algorithm to sort an array of 10 integer numbers showing all the intermediate steps :

   35, 25, 15, 5, 14, 18, 16, 13, 17, 19

   How many times will the inner loop execute and number of key comparisons required. 20

174963

No. of Printed Pages : 2

BCSL-045/S2

Bachelor of Computer Application (Revised) (BCA) Term-End Examination

December, 2018

INTRODUCTION TO ALGORITHM DESIGN LAB

Time : 1 Hour *Maximum Marks : 50*

Note : (i) There are ***two*** compulsory questions.

(ii) Each question carries 20 marks.

(iii) The rest 10 marks are for viva-voce.

(iv) All programs are to be written in 'C' language.

---

1. Write a program to produce the largest difference between the consecutive integers in an array. How many times the loop and the substraction operation will execute ? 20

2. Write a C-program to execute a polynomial expression using Horner's rule and count the number of key operations. 20

106043

No. of Printed Pages : 2

BCSL-045/S3

Bachelor of Computer Application (Revised) (BCA)

Term-End Examination

December, 2018

INTRODUCTION TO ALGORITHM DESIGN LAB

Time : 1 Hour *Maximum Marks : 50*

Note : (i) There are ***two*** compulsory questions.

(ii) Each question carries 20 marks.

(iii) The rest 10 marks are for viva-voce.

(iv) All programs are to be written in 'C' language.

---

1. Given an array of n distinct integers, determine the position of an integer in the list using a Binary Search algorithm : 20

   Array : 15, 20, 25, 30, 32, 35, 40, 45 search for 32.

   How many times the number of comparisons and division of an array will execute ?

2. Write a program that finds the location of the first odd number in an array of integer numbers. Calculate the number of times the loop and the arithmetic operation to test whether a number is odd or even will execute. 20

177203

No. of Printed Pages : 2

BCSL-045/S4

Bachelor of Computer Application (Revised) (BCA)

Term-End Examination

December, 2018

INTRODUCTION TO ALGORITHM DESIGN LAB

Time : 1 Hour *Maximum Marks : 50*

Note : (i) There are ***two*** compulsory questions.

(ii) Each question carries 20 marks.

(iii) The rest 10 marks are for viva-voce.

(iv) All programs are to be written in C-language.

---

1. Given an array of n distinct integer numbers determine the location of an integer number in an array using a linear search. Calculate the number of times the key operation (comparison) and the loop will execute. 20

2. Write a program that finds the location of the last even integer number in an array. Calculate the number of times the loop and arithmetic operation to test whether the number is an even integer number or not will execute. 20