



Faculty of Technology and Engineering

Chandubhai S. Patel Institute of Technology [CSPIT]

U & P U. Patel Department of Computer Engineering

Date: 26/08/2022

Practical List

| Academic Year | • | 2022-23 | Semester | •• | 1 |
|---------------|---|---------|-------------|-----|-----------------------------------|
| Course code | : | CE143 | Course name | • • | Computer Concepts and Programming |

| Set No. | Progr am No. | | Aim | | | | | |
|------------|--------------------|---|--|--|-----|--|--|--|
| 1 | 1.1 | sure your outproduction, a ASCII Value Outcome: | put looks exactly as shown land the title and author). Use and the title and author). Use a sisting something, you are feed gy you fight, you are feeding i If you are pushing something aw You are inviting it to see shapes in the output: Smalue for Smiling face alue for Diamond is alue for Heart is is 3. where and write algorithm the ple on Turbo C or Code ble you learnt about ASCII validiamond and heart? If yes, eir values in tabular formation. | ing it. t. stay." by Michael Singer. \(\) \(| 1,2 | | | |
| | | Sr. No. | Symbol | ASCII Value | | | | |

| | 1 | | | | | | |
|-----|---|--|---|-------------|---------------------------|--|--|
| | 2 | | | | | | |
| | 3 | | | | | | |
| | 4 | | | | | | |
| | 5 | | | | | | |
| 1.2 | Basic Informat should contain Expected Out Draw flowchar screenshot of o | rt, write algorithm and proput output ====#=====#====#= BIO -I ====#=====#= Basic Info Name : Address : Mobile Number: Gender : | ogram for given =====#===== DATA =====#===== rmation XYZ XYZ XYZ 123 M/F | scenario. A | Also attach | | |
| | Date of Birth : DD/MM/YYYY Education Qualification | | | | | | |
| | | SSC -> "Percentage"HSC -> "Percentage" | Name of school | | Passing Year Passing Year | | |
| | | Other Info | ormation | | | | |
| | #=====#=== | Technical Skills : Hobbies : | 'JAVA', 'C', 'C++' ABC, XYZ | =#=====# | <i>‡</i> = = = = = # | | |
| | #=====#=== | THANK = = = = = = = = = = = = = = = = = | | :#=====# | ŧ====# | | |
| | stateme | s the purpose of using escants. Mention any 5 escants purpose. | | | | | |
| | Sr. No. | Escape Sequence | | Purpose | | | |
| | 1 | | | | | | |
| | 2 | | | | | | |
| | $ _3$ | | | | | | |
| l | | | | | | | |

| | | 5 | | | | | |
|----|-----|---|--|----------------------------|--|--|--|
| 2. | 2.1 | If total peroprogram to population of Expected O Draw flowed screenshot of | hart, write algorithm and program for given scenario | tion, write a comen if the | | | |
| | | Sr. No. | Get Outcome | Value | | | |
| | | 1 Total Population | | | | | |
| | | 2 | Number of Literate (Men + Women) | | | | |
| | | 3 | Number of Men | | | | |
| | | 4 | Number of Literate Men | | | | |
| | | 5 | Number of illiterate Men | | | | |
| | | 6. | Number of Women | | | | |
| | | 7. Number of Literate Women | | | | | |
| | | 8. | Number of illiterate Women | | | | |
| | | Questions: 1. Has this scenario helped you learn about integer and float datatype? If yes, then mention the requirements of using integer and float data types. | | | | | |

A Bigbazaar cashier has currency notes of denominations 10,50 and 100. If the amount to be withdrawn is input through the keyboard in hundreds, find the total number of currency notes of each denomination the cashier will have to give to the withdrawer.

Expected Outcome:

Draw flowchart, write algorithm and program for given scenario. Also attach screenshot of output

Fill up the required number of currency notes of denomination 10, 50 and 100 in below given table as per the output received.

| Sr. No. | Note Requirements | Counts |
|---------|-----------------------------|--------|
| 1 | Requirement of 100 Rs. note | |
| 2 | Requirement of 50 Rs. note | |
| 3 | Requirement of 10 Rs. note | |

Questions:

1. Have you learned about how scanf function can be used to collect the user input? Give the correct answer for the following table:

| Sr. No. | Data Type | Format Specifier | Example of data |
|---------|-----------|------------------|-----------------|
| 1 | Integer | | |
| 2 | Float | | |
| 3 | Char | | |

| | 2.3 | Output should be: Enter Basic Sa Allowances: DA = 70% of I HRA = 7% of MA = 2% of B TA = 4% of Basic Deduction: PF = 12% of B IT = any value Gross Salary = Net Salary = C Expected Out Draw flowchar | Basic Salary asic Salary asic Salary asic Salary (e.g. 500) Basic Salary + Allowances bross Salary – Deduction come: rt, write algorithm and program for given s | | | | | |
|---|-----|--|--|---|--|--|--|--|
| | | screenshot of o | output. | | | | | |
| | | Sr. No. | mentioned in below given table as per the Input/Outputs | Amount | | | | |
| | | 1 | Enter your Basic Salary | | | | | |
| | | 2 | DA of Basic Salary | | | | | |
| | | 3 | HRA of Basic Salary | | | | | |
| | | 4. | MA of Basic Salary | | | | | |
| | | 5. | TA of Basic Salary | | | | | |
| | | 6. | PF of Basic Salary | | | | | |
| | | 7. | Gross Salary | | | | | |
| | | 8. | Net Salary | | | | | |
| | | Questions: 1. Have you learned about various data types that can be suitably used for this problem? Do mention which data types can be used and why? Also mention the difference between the outputs. | | | | | | |
| 3 | 3.1 | calculate the ti Define the valu G as the accele Display the tin Hint: Use Math.h he Expected Out Draw flowchar screenshot of co | rt, write algorithm and program for given soutput. Out as per the inputs mentioned in below g | the pendulum and from the keyboard. alue of π cenario. Also attach | | | | |

| Su No | In | ıput | Output |
|---------|--------|----------------------|--------------------------|
| Sr. No. | Length | Gravity | Time Calculated(seconds) |
| 1. | 50 m | 9.8 m/s ² | |
| 2. | 50 m | 0 m/s ² | |
| 3. | 50 m | 0.9993 g | |
| 4. | 50 m | -1 g | |

Questions:

1. Have you learned about, how math function is useful for calculating square root? Which datatype is supported by all math functions? Also mention any 5 math functions with their purpose.

| Sr. No. | Math function | Description |
|---------|---------------|-------------|
| 1. | | |
| 2. | | |
| 3. | | |
| 4. | | |
| 5. | | |

3.2 Let us understand the working of Pre-increment, Post-increment, Predecrement and Post-decrement

a. Consider a scenario where, Boys are playing in the park and collecting and removing the yellow balls in/from the bucket based on teacher's instruction. Let's say there are already 10 Yellow balls present in a bucket. Following is the sequence of the instructions given by the teacher for adding/removing the balls.

.Rajiv: ++ Yellow .Preet: --Yellow .Raj: Yellow++ .Ritul: Yellow--

Expected Outcome:

Fill up the data mentioned in below given table as per the output received.

| Sr. No. | Instructions | Yellow |
|---------|------------------------|--------|
| 1. | Count before execution | |
| 2. | Count after execution | |

b. Consider another scenario where boys and girls both are asked to add/remove Yellow and Pink balls from the bucket respectively. Currently there are 10 Yellow balls in the bucket and 20 Pink balls.

Teacher has given the sequence of instructions as below for adding/removing the balls. Calculate = ++Yellow + Yellow++ + --Yellow + ++Pink - --Pink - --Pink Get the count of Yellow and Pink balls after evaluating above given scenario. **Expected Outcome:** Fill up the data mentioned in below given table as per the output received. **Instructions** Yellow Pink Sr. No. 1. Count before execution 2. Count after execution Also get the count of calculate and explain how it is calculated in stepwise manner. (hint: left to right, as per memory) **Ouestions:** Have you understood the working of Pre-increment, Post-increment, Predecrement and Post-decrement? **Rubrics:** Output should be as mentioned in the expected outcome, if it is imperfect then submission marks are proportional. 3.3 Write a C program to swap two numbers (use two variables for collecting 1,2 value from user) without using third variable. (Hint: Use arithmetic operators) **Expected Outcome:** Draw flowchart, write algorithm and program for given scenario. Also attach screenshot of output. Fill up the output as per the output received in console. Sr. No. Number1 Number2 Instruction 1. Before Swapping 2. After Swapping

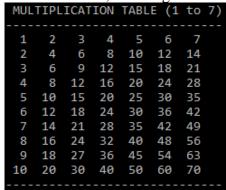
Questions:

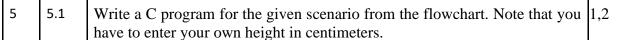
1. Have you learned about, how we can use arithmetic operators for swapping the numbers?

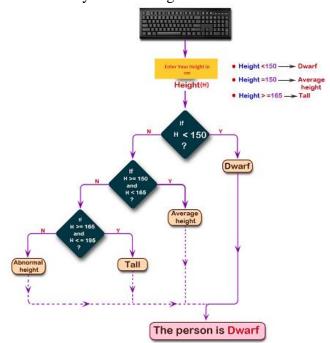
4 4.1 a. Write something about your characteristics not more than 50 words 1,2 using gets function and print out the same using puts function. **Expected Outcome:** Draw flowchart, write algorithm and write program for given scenario. Also attach the screenshot of output. **Ouestions:** 1. What is the significance of using gets and puts? Are they acting as replacement of any function? How? b. Write a program to convert the decimal number into octal and hexadecimal format. Print hexadecimal and octal values for given inputs in expected outcomes. Hint: Use %o and %x **Expected Outcome:** Draw flowchart, write algorithm and program for given scenario. Also attach screenshot of output. Fill up the output as per the inputs mentioned in below given table as per the output received in console. Sr. No. Octal Inputs Hexadecimal 1. Your Roll No 2. 143 3. 0 4. 1 5. -1 Write a C Program to Print multiplication table from 1 to 7 to achieve the 1,2 4.2 following output. (Use #define directives and do while loop)

Expected Outcome:

Draw flowchart, write algorithm and write program for given scenario.







Expected Outcome:

Write algorithm and write program for given scenario. Also attach screenshot of output.

Tick mark your achieved result in the appropriate column:

| Sr. No. | Inputs (cm) | Dwarf | Average | Tall | Abnormal |
|---------|-----------------------|-------|---------|------|----------|
| 1. | Your Height | | | | |
| 2. | Your Mother's height | | | | |
| 3. | Your Father's height | | | | |
| 4. | Your Sibling's height | | | | |

Write a C program to find all roots of a Quadratic equation using nested switch case. Take three user inputs from keyboard for finding the discriminant (b2 – 4ac). Use the concept of nested switch case for finding the roots of equation. Get the outputs for roots till 2 decimal points only.

Hint:

Discriminant > 0

root1 = (-b + sqrt(discriminant)) / (2*a)

root2 = (-b - sqrt(discriminant)) / (2*a)

Discriminant < 0

root1 = root2 = -b / (2*a)

imaginary = sqrt (-discriminant) / (2*a) (eg. Print it as: i20.3, i.e. i followed by value)

Discriminant = 0

root1 = root2 = -b / (2*a)

Expected Output:

Draw flowchart, write algorithm and program for given scenario. Also attach screenshot of output.

Input values in the console as per the table given below and write the results in the table, based on received output.

| Sr. No. | Inputs | | | Root1 | Root2 | Imaginary |
|---------|--------|----|----|-------|-------|-----------|
| | a | b | c | | | |
| 1. | 1 | 2 | 3 | | | |
| 2. | 3 | -7 | -5 | | | |
| 3. | 9 | 12 | 4 | | | |

Ouestions:

- 1. Have you learned about how to use normal switch case and nested switch case?
- 2. Is default case necessary for every switch case?
- 3. What if break statement is not mentioned between two consecutive cases?

If the ages of Ram, Shyam and Ajay are input through the keyboard, write a program to determine the youngest of the three. If all of them are of same age then print that "All are of same age". (Hint: Use Nested if else statement)

Expected Output:

Draw flowchart, write algorithm and program for given scenario. Also attach screenshot of output.

Take different input values as per your wish and given scenario get output.

| Sr. No. | | Inputs | | Expected |
|------------|-----------|-----------|-----------|-------------------------------|
| | Ram | Shyam | Ajay | Output |
| 1. | Same | Same | Same | All are of equal age |
| 2. | Different | Different | Different | Ram/Shyam/Ajay is youngest |

| 3. | Same | Same | Different | Ram and Shyam are equal | | |
|----|-----------|-----------|-----------|--------------------------|--|--|
| 4. | Different | Same | Same | Shyam and Ajay are equal | | |
| 5. | Same | Different | Same | Ram and Ajay are equal | | |

Questions:

- 1. Have you tried merging the concepts of Nested if else and else if ladder in this scenario?
- 2. Differentiate the concept of Nested if else and else if ladder.
- The policy followed by a company to process customer orders is given by the following rules: Suppose stock=100
 - a. If a customer order is less than or equal to that in stock and 'has credit' is OK, supply 'has requirements.
 - b. If 'has credit' is not OK do not supply. Send him intimation.
 - c. If 'has credit' is OK but the item in stock is less than 'has ordered', inform 'out of stock' and intimate him that the balance will be refunded.

Write a C program to implement the company policy.

Expected Outcome:

Draw flowchart, write algorithm and program for given scenario. Also attach screenshot of output.

Give the inputs in the console as per the below given table, and provide the output accordingly.

| Sr. No. | | Inputs | | | | | | | |
|---------|--------|--------------|-----|--------|--|--|--|--|--|
| | Credit | Credit Order | | Output | | | | | |
| 1. | Y or y | 20 | 100 | | | | | | |
| 2. | N or n | 50 | 80 | | | | | | |
| 3. | Y or y | 50 | 80 | | | | | | |
| 4. | Y or y | 70 | 30 | | | | | | |
| 5. | Y or y | 30 | 30 | | | | | | |

Questions:

1. Which kind of logic have you used for building this program? **If else if ladder** or **nested if else** statements?

1,2,6

| 6 | 6.1 | registering in But he is not entering varies So let us he Constraints lowercase, up Note: Use Divalidations. Expected Or Draw flowch Mention all the source of the source | Expected Outcome: Draw flowchart and write algorithm and write program for given scenario. Mention all the inputs that you have experimented and outputs received. Also mention the correct alphanumeric password created by you. Sr. Inputs | | | | | | | |
|---|-----|--|---|-------|--------|--|--|--|--|--|
| | | Sr. No. | Inputs Output | | | | | | | |
| | | | Mention here the passwords used for wrong experiments Password does not satisfy constraints!!! Please try again | | | | | | | |
| | | | Mention the passwords that gave you correct validation Good Password, you may proceed | | | | | | | |
| | | 1. Have synta. 2. Have | Questions: 1. Have you understood working of dowhile loop? Do mention the syntax of this loop. 2. Have you used for loop in this program? 3. What is goto statement? How is it useful? | | | | | | | |
| 6 | 6.2 | Two numbers are entered through the keyboard. Write a program to find the value of one number raised to the power of another. (Use While loop) Expected Outcome: Draw flowchart, write algorithm and program for given scenario. Also attach screenshot of output. Mention at least 3 different inputs that you have experimented and outputs received. | | | | | | | | |
| | | Sr. No. | Base No. | Power | Output | | | | | |
| | | 1. | | | | | | | | |
| | | 2. | | | | | | | | |
| | | 3. | | | | | | | | |
| | | Questions: 1. Have you understood the concept of while loop? if yes write its syntax here. | | | | | | | | |

| 6.3 | Write a C program for Big bazaar cashier to count the amount to be collected from the customer. Cashier will enter the numbers one after another for each item and to get the summation of entered numbers, he has to enter 0. (Use for loop) (Hint: Break statement can be used) Expected Outcome: Draw flowchart, write algorithm and program for given scenario. Also attach screenshot of output. Mention at least 3 different inputs that you have experimented and outputs received. | | | | | | | | |
|-----|---|--------------------------|-------------------------------|----------------|--|--|--|--|--|
| | Sr. No. | Entered Number | Summation after entering 0 | | | | | | |
| | 1. | | | | | | | | |
| | 2. | | | | | | | | |
| | ••• | | | | | | | | |
| | ••• | | | | | | | | |
| | N. | | | | | | | | |
| | Questions: 1. Have you learned the concept of for loop using above given scenario? Explain what does 'i' stands for in the for() loop, consider the given example below. E.g. for(i=0;i<10;i++) | | | | | | | | |
| 6.4 | Write a program for a match-stick game between the computer and a user. Your Program should ensure that the computer always wins. Rules for the games are as follows: • There are 21 match-sticks. • The computer asks the player to pick 1, 2, 3, or 4 match-sticks. • After the person picks, the computer does its picking. • Whoever is forced to pick up the last match-stick loses the game. Use while loop, break and Continue Statements. To understand the above game in a better way, visit the following link: http://atozmath.com/Games/21MatchStick.aspx Expected Outcome: Draw flowchart, write algorithm and program for given scenario. Also attach screenshot of output. Write the sequence of sticks inputted by you and computer one after another. | | | | | | | | |
| | Sr. No. | Entered Number b User | Entered Number by Computer | Sticks left | | | | | |
| | 1. | | Computer | 2010 | | | | | |
| | 1 | | | | | | | | |
| | 2. | | | | | | | | |
| | 2. | | | | | | | | |
| | 2. | | | | | | | | |

| | | _ | Questions: 1. What is the significance of using break and continue statement? | | | | | | | |
|---|--|--|---|---------------------------|--------|-------|--|--|--|--|
| 7 | 7.1 | program to how many Expected Draw flow screenshot Enter the | Twenty-five numbers are entered from the keyboard into an array. Write a C program to find out how many numbers of them are positive, negative, and how many are even and odd? Expected Outcome: Draw flowchart, write algorithm and program for given scenario. Also attach screenshot of output. Enter the counts of positive, negative, even and odd numbers in the below given table as per the output received. | | | | | | | |
| | | Sr. No. | Parameter | Counts | | | | | | |
| | | 1. | Positive Numbers: | | | | | | | |
| | | 2. | Negative Numbers: | | | | | | | |
| | | 3. | Even Numbers: | | | | | | | |
| | 4. Odd Numbers: Questions: 1. Is it necessary to initialize a variable with zero everytime? If yes, then why? If No, then when is it necessary to initialize the number with zero and why? | | | | | | | | | |
| | | | | | | | | | | |
| | 7.2 | arrays into sorting] Expected Draw flow screenshor Following input valuenter size enter A[1] enter A[2] enter A[4] enter B[2] enter B[3] enter B[4] enter B[5] | Expected Outcome: Draw flowchart, write algorithm and program for given scenario. Also attach screenshot of output. Following screenshot showcases the expected outcome, you can enter the input values of your choice enter size of A:4 enter A[1]:2 enter A[2]:5 enter A[3]:7 enter Size of B:5 enter Size of B:5 | | | | | | | |
| | 7.3 | Test Data Input the Input the Expected Draw flow | rows and columns of a rows and columns of a Input and Output: | first matrix second ma | x: 3 3 | 1,2,3 | | | | |

| | 1 | T | | | | | | | | |
|---|-----|-------------------------------|---|-------------------------------|----------------|-----------|--------------------|---------------|---------|--|
| | | Input for f | irst matrix: | | | | | | | |
| | | j[0 | | 1 | | | | | | |
| | | i[0] 2 | 5 8 | | | | | | | |
| | | i [1] 3 i [2] 4 | 6 9 7 10 | | | | | | | |
| | | | Second Matri | | | | | | | |
| | | j[0 | | | | | | | | |
| | | i[0] 2 | 3 4 | | | | | | | |
| | | i[1] 9 | 7 6 | | | | | | | |
| | | Fill ym th | 5 2 | | lata in tha b | مامين ما | von toblo | aa man tha | | |
| | | output rec | | ltiplication of | iata in the b | elow gi | ven table | as per the | | |
| | | j[0] | | | | | | | | |
| | | i[0] | | | | | | | | |
| | | i[1] | | | | | | | | |
| | | i[2] Questions | | | | | | | | |
| | | _ | | ntages of usin | ng Array Ind | lexes. V | When is it | suitable to | | |
| | | | ce array inde | • | 8 ., | | | | | |
| | | | | | | | | | | |
| 8 | 8.1 | | | how strong i ppercase alpl | | | | | 1,2,3,6 | |
| | | | | | | | | | | |
| | | of 8. | ne user from the keyboard. Length of entered password(string) should be | | | | | | | |
| | | | | ifying streng | _ | | ogo o lek o | hata diaita | | |
| | | | r ong: Mixtur d special cha | re of lowerca racters | ise aipnabeis | s, uppero | case aipna | ibeis, digits | | |
| | | | 1 | cture of lov | wercase alp | habets, | digits a | nd special | | |
| | | | aracters | .1111 | 14-/1: -:4-/ | 1 1 | | | | |
| | | | | nly has alpha | bets/digits/s] | peciai ci | naracters | | | |
| | | _ | Outcome: | alaamithuu an | d mus susum fo | | a a a m a mi a | Alaa attaab | | |
| | | | t of output. | algorithm an | u program ic | or given | scenario. | Aiso attach | | |
| | | | | iven in table | and try vari | ous test | cases suc | ch a way to | | |
| | | | | of password | | | | | | |
| | | Sr. No. | Input | Lowercase | Uppercase | Digits | Symbol | Output | | |
| | | Example | Abc@1234 | ✓ | ✓ | ✓ | ✓ | Strong | | |
| | | 1. | | | | | | | | |
| | | 2. | | | | | | | | |
| | | 3. | | | | | | | | |
| | | Questions | | | | | | | | |
| | | | • | ference betw ing characte | _ | nd char | acter. Als | o write the | | |
| I | | Syl | max ioi piill | ing characte | and sumg. | | | | | |

| 8.2 | names. Y collecting Hint: Us students. Expected Draw flow screensho | flowchart, write algorithm and program for given scenario. Also attach ashot of output. the inputs entered by you for 5 names, and give the output how they | | | | | | |
|---|---|---|-----------------------------------|-------------|---------------|----------------|--|--|
| | Sr. No. | | Sorted (| Output as 1 | per output | | | |
| | 1. | • | | | | | | |
| | 2. | | | | | | | |
| | 3. | | | | | | | |
| | 4. | | | | | | | |
| | 5. | | | | | | | |
| Questions: 1. Which string functions have you learned from this program? Explai any 5 string functions in below given table. | | | | | | ogram? Explain | | |
| | Sr. No. | String Functions | String Functions Syntax Purpose | | | | | |
| | 1. | | | | | | | |
| | 2. | | | | | | | |
| | 3. | | | | | | | |
| | 4. | | | | | | | |
| | 5. | | | | | | | |
| 8.3 | using recu Expected Draw flow screensho | rite a C program to check if the user inputted string is palindrome or not ng recursion. pected Outcome: aw flowchart, write algorithm and program for given scenario. Also attach reenshot of output. ter the following test inputs and give the output as per the output gained. | | | | | | |
| | Sr. No. | Input | | | t as per outp | | | |
| | 1. | Alpha | | | | | | |
| | 2. | Madam | | | | | | |
| | 3. | saippuakivikauppi | ias | | | | | |
| | 4. | Hannah | | | | | | |
| | Questions | s: | | | | | | |

| | | Explain the concept of recursion. Explain the difference between recursion and iteration? | | | | | | | |
|---|---|--|---|-----------------------|-----------|---------------------------------|-----|--|--|
| 9 | 9.1 | types of argument pargument programment programment programment programment programment programment for the control of the con | C program to check if the entered nuser defined functions is passed and no return value to passed but a return value passed but no return value passed and a return value passed and program of output. | n for giv nputs en | en scenar | io. Also attach you and tick | | | |
| | | Sr. User Defined Functions Input Prime Non-Prime | | | | | | | |
| | | 1. No arguments passed and no return value | | | | | | | |
| | | 2. No arguments passed but a return value | | | | | | | |
| | | 3. Argument passed but no return value | | | | | | | |
| | | 4. Argument passed and a return value | | | | | | | |
| | | Questions:1. You might be clear now, how user defined functions are created in different ways. Explain them. | | | | | | | |
| | 9.2 Verify the triangle, if the length of the sides of a triangle are denoted by a, b and c, then the area of triangle is given by: $s = \frac{a+b+c}{2}$ | | | | | | 1,2 | | |
| | | $A = \sqrt{a}$ | $s(s-a) \times (s-b) \times (s-c)$ © www.petervis.com | | | | | | |
| | | Collect t Triangle Expecte Draw flo screensh Enter the | ed function. he values for a, b and c from user to | m for giv | en scenar | io. Also attach | | | |

| | | C. N. | I | nput | | E | : T: | | No.4 - Totan ala | | |
|----|------|--|------|-------|-------|--------|----------------|-------|------------------|----------------|--|
| | | Sr. No. | a | b | c | F Orm | ing Triangle | e 1 | Not a Triangle | | |
| | | 1. | | | | | | | | | |
| | | 2. | | | | | | | | | |
| | | 3. | | | | | | | | | |
| | | Question: | | in th | e co | ncept | of nested fun | nctio | ons in C. | | |
| | 9.3 | A positive integer is entered through the keyboard, write a function to find the binary equivalent of this number using recursion. Expected Outcome: Draw flowchart, write algorithm and program for given scenario. Also attach screenshot of output. Enter the inputs for converting the number into binary form, try it for three different inputs and fill the below given table: | | | | | | | | | |
| | | Sr. No. | In | put | Bi | nary | | | | | |
| | | 1. | | | | | | | | | |
| | | 2. | | | | | | | | | |
| | | 3. | | | | | | | | | |
| | | Question | s: | | | | 1 | | | | |
| | | 1. M | enti | on th | ne ac | lvanta | iges of using | rec | ursion in a prog | ram. | |
| 10 | 10.1 | Write a C program to create a structure of Book Detail and display the details of the book in appropriate format by passing structure as a function argument. Book Detail must contain following information: Book Title, Author name and Amount of book in float. Expected Outcome: Draw flowchart, write algorithm and program for given scenario. Also attach screenshot of output. Enter the inputs for converting the number into binary form, try it for three different inputs and fill the below given table: | | | | | | | | 1,2,3 | |
| | | Sr. No. | Bo | ook 7 | Γitle | Au | thor Name | Aı | mount of book | | |
| | | 1. | | | | | | | | | |
| | | 2. | | | | | | | | | |
| | | 3. | | | | | | | | | |
| | | | | | clare | e func | tion inside st | ruct | ture of C Progra | mming? Explain | |

| | 10.2 | author n or not. (content dand Expecter Draw flor screensh Enter the | Create a Union called library to hold accession number, title of the book, author name, price of the book and flag indicating whether the book is issued or not. (flag = 1 if the book is issued, flag = 0 otherwise). Write a program to enter data of one book and display the data. Expected Outcome: Draw flowchart, write algorithm and program for given scenario. Also attach screenshot of output. Enter the inputs for collecting the details for library books. Here, if user nputs flag=1, then book is issued else book is not issued. | | | | | | | |
|----|------|---|--|--|------------|----------|----------|------------------------------------|--|--|
| | | Sr. No. | Accession Number | Title of Book | Author | Price | Flag | Output | | |
| | | 1. | | | | | | Book Issued | | |
| | | 2. | | | | | | Book Not Issued | | |
| | | Questions: 1. Explain the major difference between structure and union in detail. | | | | | | | | |
| | 10.3 | Age, Na Expecte Draw flo screensh Get the x Ente Ente name age addr sala Proc Questio | me, Address ared Outcome: owchart, write anot of output. output as menti Termir r name are address r salary : ess: ry: ess finit | and Salary by algorithm and oned below hal age of empty. | of em | for give | en scena | details such as, ario. Also attach | | |
| 11 | 11.1 | Comput in categorial CLASS Marks | | Programm: SS, FIRST FION using ies | ing and co | mputes | the nun | subject CE143 nber of students | | |

| 69 to 60 | FIRST CLASS |
|----------|-------------|
| 59 to 40 | PASS |
| Below 40 | FAIL |

For example, if following marks of 10 students are entered:

34 56 78 98 12 31 67 75 91 23

Then the output should be

DISTINCTION 4 FIRST CLASS 1 PASS 1 FAIL 4

Expected Outcome:

Draw flowchart, write algorithm and program for given scenario. Also attach screenshot of output.

You are requested to gain all categories of results, so input the values accordingly, also write the counts of all the categories.

| Sr. No. | Input | Distinction | First Class | Pass | Fail |
|---------|--------|-------------|-------------|------|------|
| 1. | | | | | |
| 2. | | | | | |
| | | | | | |
| 10. | | | | | |
| | Counts | | | | |

Questions:

1. Explain the importance of using pointers?

11.2 Write output for the following programs:

char *str;

```
1,2,5
```

```
#include<stdio.h>
void display();
int main()
{
    void (*func_ptr)();
    func_ptr=display;
    printf("Address of functions display is %u\n",func_ptr);
    (*func_ptr)();
    return 0;
}
void display()
{
    puts("By helping others, we help overselves!!");
}

2. (Functions Returning Pointers)
    char *copy (char*,char *);
    int main()
```

| | | | T 1 | | | | |
|----|------|---|-------|--|--|--|--|
| | | <pre>char source[] = "Kindness";</pre> | | | | | |
| | | *t='\0'; | | | | | |
| | | return(r); } | | | | | |
| | | | 1.0.0 | | | | |
| 12 | 12.1 | Write a program to read a text file 'Demo.txt' and print each word of that file in reverse order. Expected Output: Draw flowchart, write algorithm and program for given scenario. Also attach screenshot of output. Example: Input: HELLO Output: OLLEH Questions: 1. Explain, why do we need to use files in C? | | | | | |
| | 12.2 | Write a C program that illustrates how to write into a file using putw() function and how to read the same file using getw() function. Use fopen(), fclose(), getw() and putw() functions. Expected Outcome: Draw flowchart, write algorithm and program for given scenario. Also attach screenshot of output. Enter the data in a file from console and retrieve that data on the console. Also attach the screenshot of file where the data is written. Questions: 1. Explain any 3 functions of file other then mentioned in the problem. Sr. No. Function Purpose | | | | | |
| | | | | | | | |
| | 12.3 | Two files Data1.txt and Data2.txt contains list of integers. Write a program to produce file Data3.txt which holds as merged list of these two lists. Use command line argument to specify the file name. Expected Outcome: | | | | | |

| | | Draw flowchart, write algorithm and program for given scenario. Also attach screenshot of output. Enter the data in a file from console and attach the screenshots of Data1.txt, Data2.txt and Data3.txt files. Also add the screenshot of console. Questions: 1. Explain the difference between argc and argv along with their significance. | | | | | | | | | | | |
|----|------|---|----------------------|------|---------|-------|---------|---------|--------|------|--|--|--|
| 13 | 13.1 | Write a program to read and print the student details using structure and Dynamic Memory Allocation. Following student details needs to be included: Roll No., Name, Age, Class, Branch. Expected Outcome: Draw flowchart, write algorithm and program for given scenario. Also attach screenshot of output. Enter this student details for N number of students, collect the no. of details to be entered from the user and ask for that many student's details. Enter all details in below mentioned table and print the values collected from user. | | | | | | | | | | | |
| | | Sr. No. | Roll No. | Name | Age | Class | Branch | | | | | | |
| | | 1. | | | | | | | | | | | |
| | | 2. | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | N. | | | | | | | | | | | |
| | | Questions: 1. Explain the benefits of using dynamic memory allocation. Give one scenario where it is most useful. | | | | | | | | | | | |
| | 13.2 | Write a program using a character string in a block of memory space created by calloc () and then modify the same to store a larger string using realloc () function. (Dynamic Array). Expected Outcome: Draw flowchart, write algorithm and program for given scenario. Also attach screenshot of output. Enter the details in below given table as per the requirement: | | | | | | 1,2,3,5 | | | | | |
| | | Sr. No. | | I | Instruc | ction | | | Output | tput | | | |
| | | 1. | String to be entered | | | | | | | | | | |
| | | 2. String received after reallocation of memory | | | | | | | | | | | |
| | | Questions: 1. Mention advantage of using realloc() function. | | | | | | | | | | | |
| | 13.3 | Write a program to enter N numbers into array and find average. Enter the size of the array through keyboard. (Dynamic Array). Use malloc () to allocate memory and use free() to free the memory after the use. Expected Outcome: | | | | | 1,2,3,5 | | | | | | |

Draw flowchart, write algorithm and program for given scenario. Also attach screenshot of output.

Enter the details in below given table as per the requirement:

| Sr. No. | Instruction | Output | | | | |
|------------|------------------|---------------------------|--|--|--|--|
| Enter the | e size of Array | N (To be entered by user) | | | | |
| 1. | | To be entered by user | | | | |
| 2. | | To be entered by user | | | | |
| ••• | | To be entered by user | | | | |
| N. | | To be entered by user | | | | |
| Average of | f entered values | | | | | |