1. Identify the input, process, and output phases in the following tasks:
   * Calculating the sum of two numbers using a calculator.
   * Obtaining the juice of a fruit using a juicer machine.
   * Creating knitwear.
   * Baking bread.
   * Washing clothes in a washing machine.

Solution:

* + **Calculating the sum of two numbers using a calculator.**

Algorithm:

->start

INPUT:

->get the two value from the user.

->first value as a and second value as b.

PROCESS:

->add the two values.

OUTPUT:

->store result in c and display it.

->end

* + **Obtaining the juice of a fruit using a juicer machine.**

->start

INPUT:

-> collect any one kind of fruits.

->extractor must be dry & clean,fruits too.

->put fruits into the juice extractor.

PROCESS:

->switch on the extractor.

-> if fruits get juice.

->stop the extractor & filter it.

OUTPUT:

->store it in a container & serve it.

->end

* + **Creating knitwear**.

->start

INPUT:

-> Take the materials needed for knitwear.

->choose a design for knitwear.

->choose whether its is manual or machinery.

PROCESS:

->if it is manual the process done by labour depends upon design.

->if it is machinery the process done by machine depends upon design.

OUTPUT:

->knitwear is ready .

->end

* + **Baking bread**

->start

INPUT:

->Gather the ingredients like bowl,butter,sugar,egg,milk.

PROCESS:

->Mix ingredients thoroughly in a bowl.

->pour the mixture into a baking pan.

->bake in the oven for 50 minutes.until bread top spring back when touched in center.

->cool on a rack before cutting.

OUTPUT:

->pack & ready for dispatch.

->end

* + Washing clothes in a washing machine.

->start

INPUT:

->place a load of cloths in the machine.

->put in detergent and then fabric softener or bleach (if it is necessary).

->decide the temperature of water and how long the clothes will be in the washing machine.

PROCESS:

->push the start button.

->and wait for the clothes to wash, and once they are finished ,move them to dryer.

OUTPUT:

->after that washed & dried clothes are ready .

->end

1. **A \_COMPILER\_\_\_\_\_\_\_\_ is a special program that converts the programming language into the machine language, at one go.**
   * Input-Process-Output cycle
   * Central Processing Unit
   * Compiler
2. **Discuss an algorithm to withdraw a required amount from an ATM**

->start

->go to any local atm.

->insert/swipe your ATM card.

->press the language button that your can want to choose.

->Enter the atm PIN.

->press the accout type(saving or current)button.

->press the cash withdraw button.

->enter the amount want to withdraw and press ok.get the amount from machine.

->a transaction slip confirming the successful transaction will be printed.collect the slip from the ATM machine.

->end

1. **Discuss an algorithm to display the sum and product of two numbers.**

->start

->get the two value from the user.

->first value as a and second value as b and c and d for storing result.

->sum and product the both values.

->store the sum result in c and store product result in d display it.

->end

1. **Consider another example of an algorithm to increment a given number by 1.**

->start

-> All you need to do is to initialize three variables.

-> get a number from user as n ,for increment i=1,store in sum after increment.

-> you need a loop which recursively adds the value of i into sum and also increment it everytime.

-> sum=n+i;

->print and display it

->end

1. **Write an algorithm to find out whether a number entered by a user is divisible by 5**

->start

->get a value from user and store the value in a.

->the given value should be divisilbe by 5 and remainder should be 0,so assign b=5.

->if the remainder is 0 the given value is divisible by 5 else not show the remainder.

->and display it.

->end

1. **Write an algorithm to display the first 10 multiples of 9**

->start

->accept the number 1 to 10 from the user as value a.

->each value should be multiply by b=9 and display.

->multiply of 1\*9.

->multiply of 2\*9.

->multiply of 3\*9.

->multiply of 4\*9.

->multiply of 5\*9.

->multiply of 6\*9.

->multiply of 7\*9.

->multiply of 8\*9.

->multiply of 9\*9.

->multiply of 10\*9.

->end

1. **Write an algorithm to find out whether a number entered by a user is even or odd.**

->start

->get a value from the user as a.

->divide the value by 2 so assign b=2.

->if the remainder is 0,the given number is even number.

->if the remainder is not a zero,the given number is odd number.

->end

1. **Write an algorithm to accept two numbers from the user, subtract the first number from the second number, and display the result**.

->start

->get the two value from the user.

->first value as a and second value as b.

->subract the frist value from the second value.

->store result in c and display it.

->end

1. **Write an algorithm to accept the principle, rate, and time values and display the simple interest.**

-> Start

-> Read Principal Amount, Rate and Time .

->Calculate Interest using formula SI= ((amount\*rate\*time)/100).

->Print Simple Interest

->end.

1. **Write an algorithm that accepts a number and displays its cube.**

->start

->get the value from the user as a.

->multilpy value a for 3 times.

->display the result.

->end

1. **Write an algorithm that accepts the length and breadth of a rectangle and displays its area and perimeter**.

->start

->get length value as L and breadth value as B from the user.

->for area of rectangle= L\*B store the result in C.

->perimeter of rectangle=2\*(l+b) store result in D.

->display it

->end

1. **Consider another example where the following remarks should be given to the students depending on the grades they have scored in the exams**:
   * Grade A: Excellent
   * Grade B: Very Good
   * Grade C: Good
   * If any other grade is entered by the user instead of A, B, or C, the message, Invalid Input should be displayed.

->Start

->get the 3 marks as m1,m2,m3 from user.

->add 3 marks stored in value tot.

->if tot is greater than 90 and less than 100 print grade A.

->if tot is greater than 80 and less than 90 print grade B.

-> if tot is greater than 70and less than 80 print grade C.

->end

1. **Write an algorithm to display the sum of the first 10 natural numbers**.

->start

-> All you need to do is to initialize two variables.

->Intialize natural number i=1 and sum=0.

-> you need a loop which recursively adds the value of i into sum and also increment it everytime.

-> sum= sum+i;

->print and display it

->end

1. **Write a pseudocode to display the sum of the first 10 natural numbers**

->start

-> initialize two variables i and sum.

->initialize i=1 and sum=0

-> need a loop which recursively adds the value of i into sum and also increment it everytime.

->for(i=1;i<=10;i++)

->sum= sum+i;

->print sum and display it.

->end

1. **Write an algorithm to display the table of 12**

->start

->accept the number 1 to 12 from the user as value a.

->each value should be multiply by b=12 and display.

->multiply of 1\*12.

->multiply of 2\*12.

->multiply of 3\*12.

->multiply of 4\*12.

->multiply of 5\*12.

->multiply of 6\*12.

->multiply of 7\*12.

->multiply of 8\*12.

->multiply of 9\*12.

->multiply of 10\*12.

->multiply of 11\*12.

->multiply of 12\*12

->end.

1. **Write a pseudocode to display the table of 12.**

->start

->numeric n.

->initialize for i=1 to 12.

->storing value a =n\*i.

->print n “X” i ”=”a

-> end

1. **Write an algorithm to display the factorial of any given number**.

->start

-> get the value from the user as a.

->assign i=1,fact=1.

->repeat this current step i=i+1 again and again until i=a.

->then fact=fact\*i;

->i=i+1;

->display the result

->end

1. **Write a pseudocode to display the factorial of any given number**

->start

-> Numeric n,i,f

->f=i=1;

->display enter the number

->accept n

->while(i<n)

{

F\*=i;

i++;

}

Display n,f

->end

20. **Write a pseudocode that accepts a number and checks whether it’s positive, negative, or zero**.

->start

->numeric num

->display enter any number

->accept num

->if(num>0) display positive

->else if(num<0) display negative

->else display 0

->end

1. **Write a pseudocode that accepts a number and checks if the number is prime.**

->start

->numeric num

-> get num from user

-> get num is Prime = True

->for Factor ranges from 2 to Num-1 do

->begin block

-> if num divisible by Factor then set is Prime = False

->end block

->if is Prime = True then display num is prime

->else display num is not prime

->end

1. **Write a pseudocode that prints the following Fibonacci series:**
   1. 0 1 1 2 3 5 8

->start

-> numeric n

   ->if n>0 display cant be less than 0

  -> else if n < 2 return n

  -> else return n=(n-1)+(n-2)

  ->Display n

->end

24. **Write a pseudocode that accepts two numbers and displays their sum and product. Considering the preceding requirements, identify the variables and constants required for writing the pseudocode**

->start

->numeric sum, product, number1, number2.

-> display Input two numbers.

->accept number1, number2.

->sum = number1 + number2.

-> print “The sum is” + sum.

-> product = number1 \* number2.

-> print “The Product is “,+ product.

-> end program Decision Structure or Selection Structure.

->end

1. **Write a pseudocode that accepts the product name and quantity as input and displays the total price using the unit prices already stored in the system. Considering the preceding requirements, identify the variables and constants required for writing the pseudocode**.

->start

->in string product name, in numeric quantity, total,unit(default in database or system).

->display ‘enter the product name’.

->accept product name.

->display ‘enter the quantity’.

->accept quantity.

->total =unit\*quantity.

->display ‘total as’+total.

->end

1. **Write a pseudocode that accepts the temperature in Celsius, converts it into Fahrenheit, and then, displays the result.**

->start

->numeric tem,result.

->display ‘enter the temperature in celsius’

->accept temp

->result=(9/s\*temp)+32

->display’temp in Fahrenheit as’+result

->end

1. **Write a pseudocode where two values have to be accepted from a user. The values have to be then compared, and a result indicating whether they are equal or not has to be displayed**

->start

->numeric num1, num2

->display “enter the num1.

->accept num1.

>display “enter the num2.

->accept num1.

->if(num1==num2)

Display(given 2 number is equal)

->else

Display(given 2 number are not equal)

->end

1. **Write a pseudocode, where the discount percentage on a TV needs to be decided on the basis of the type of TV. If the TV is CRT (C), the discount will be 5% of the selling price (SP). If the TV is LCD (L), then the discount will depend on the size of the TV screen. For 14 inches screen, the discount is 8% of the SP. For 21 inches screen, the discount is 10% of the SP. The following table summarizes the discount rates.**

->start

-> string crt,lcd,tv

->numeric inch

->display model of tv

->accept tv

->Display inch of tv

->accept inch

->if (tv==crt)display 5% discount of selling price

->else if(inch==14)display 8% discount of selling price

->else if (inch==21)display 10% discount of selling price

->else display enter the correct model

->end

1. **Write a pseudocode, where all candidates have to take two tests before appearing for an interview. A candidate is selected for the interview round, based on the scores of the two tests. The individual score in each test should be greater than 75, and the average score for the two tests should be a minimum of 80. A call letter for the interview is to be sent to candidates who have been selected, and a rejection letter is to be sent to the rest.**

->start

->numeric test1,test2

->display the mark of test1

->accept test1

->display the mark of test2

->accept test2

->if (test1>=75&&test2>=75)display scored good marks and send a letter

->else if(test>=80&&test2>=80) display scored marks and send a letter

->else display better try a next time

->end

1. **Write a pseudocode, where you need to write a pseudocode to accept two numbers and any one of the operators: +, -, \*, and /. Based on the operator entered, the pseudocode should add, subtract, multiply, or divide the numbers and display the result.**

->start

->numeric num1,num2,tot,op

->display enter the number1

->accept num1

->display enter the number2

->accept num2

->display enter the operator

->accept op

->If (op==+)display sum=num1+num2

->else If (op==-)display sum=num1-num2

->else If (op==\*)display sum=num1\*num2

->else (op==/)display sum=num1/num2

->end

1. **Write a pseudocode, scenario of automated telephone call transfer to various departments of the company, such as Marketing, Finance, Customer Care, Human Resource (HR), and Information**.

->start

-> Numeric market=1,finace=2,cus=3,hr=4,infon=5,

->display select the department( marketing,finace,customer,HR,information)

->accept n

->if(n==1)

->display connect call to marketing department

->else if(n==2)

->display connect call to finance department.

->else if(n==3)

->display connect call to customer care.

->else if(n==4)

-> display connect call to HR department.

->else(n==5)

-> display connect call to information.

->end

1. **Write a pseudocode, where you need to write a pseudocode that accepts a letter from the alphabet and checks whether it is a vowel.**

->start

->char ch

->display enter the character

->accept ch

->if ((ch >= 'a' && ch <= 'z') || (ch >= 'A' &&ch <= 'Z') )

{

if (ch=='a' || ch=='A' || ch=='e' || ch=='E' || ch=='i' || ch=='I' || ch=='o' || ch=='O' || ch== 'u' || ch=='U'

->display it is vowels +ch

->else if display it is consonant +ch

Else if(ch>=1&&ch<=10)

->else display it is numeric

->end