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| **Q.1** |  |  |  |  |
|  | **a)** | **Draw the flow chart to get two integer items from keyboard and then display to the screen their sum, difference and product.**  **Ans:**  Start    Input two nmb 2and 3  Sum= 2+3  Print sum  Difference= 2-3  Print difference  Product = 2\*3  Sum=5  Difference=1  Product=6  Print product  stop |  |  |
|  |  | **Draw the flow chart to prompt the user for a temperature in degreesCelsius (C), then convert the temperature in degrees Fahrenheit (F) using the following formula and display temperature in Fahrenheit (F) on monitor.**    **Ans:**  Step1 Start  Step 2 Read the input of temperature in Celsius (say C)  Step 3 F= (9\*C)/ 5+32  Step 4 Print temperature in Fahrenheit is F  Step 5 Stop  Start    Read C  F= (9\*c)/5+32  Print F  Stop |  |  |
| **Q.2** | **a)** | **Draw the flow chart and write a C++ program to find the Area and Perimeter of a Rectangle using the below formulae**  **Area of rectangle:  height\*width   Perimeter of rectangle:  2\*(height+width)**  **Ans:**  #include<iostream>  Using namespace std;  Int main()  {  Int width, lngth, area, peri;  Cout<<”\n\n find the area an perimeter of a rectangle:\n”;  Cout<<”---------------------------------------------------------\n”;  Cout<<” input the length of the rectangle : “;  Cin >>length;  Cout<<” input the width of the rectangle:”;  Cin>>width;  Area= (length\*width);  Peri=2\*(lngth+width);  Cout<<” the area of the rectangle is : “<<area<<endl;  Cout<<”the perimeter of the rectangle is : “ peri<<endl;  Cout<<endI;  return 0;  }  **Sample Output:**  Find the Area and Perimeter of a rectangle:  Input the length of the rectangle : 10  Input the width of the rectangle : 15  The area of the rectangle is : 150  The perimeter of the rectangle is : 50  **Flow chart:**    Int width, lngth, area, peri;  Cout<<”\n\n find the area an perimeter of a rectangle:\n”;  Cout<<”---------------------------------------------------------\n”;  Cout<<” input the length of the rectangle : “;  Cin >>length;  Cout<<” input the width of the rectangle:”;  Cin>>width;  Area= (length\*width);  Peri=2\*(lngth+width);  Cout<<” the area of the rectangle is : “<<area<<endl;  Cout<<”the perimeter of the rectangle is : “ peri<<endl;  Cout<<endI;  return 0;  End  End |  |  |
|  | **b)** | **Draw the flow chart and write a C++ program to obtain the radius of a circle. Then program calculates the area and perimeter using the below Formulae**  **Area of Circle = π\*R\*R**  **Circumference formula C = 2 \* π \* R. where π=3.14**  **Ans:**  #include<iostream>  #define PI 3.14159  Using namespace std;  Int main()  {  Float radius, area, circum;  Cout<<”\n\n find the area and circumference of any circle : \n”;  Cout<<”--------------------------------------------------------: \n”;  Cout<<” input the radius (1/2 of diameter ) of a circle : “;  Cin>>radius;  Circum = 2\*PI\*radius;  Area= PI\*(radius\*radius);  Cout<<” the area of the circle is : “<< area<<endl;  Cout<<” the circumference of the circle is : “<<circum<<endl;  Cout<<endl;  return 0; |  |  |
| End |  | }  **Sample Ouput:**  Find the area and circumference of any circle :  -------------------------------------------------------------------- -- --- ---  Input the radius (1/2) of diameter of a circle : 5  The area of the circle is : 78.5397  The circumference of the circle is : 31.4159.  **Flow chart:**  Float radius, area, circum;  Cout<<”\n\n find the area and circumference of any circle : \n”;  Cout<<”--------------------------------------------------------: \n”;  Cout<<” input the radius (1/2 of diameter ) of a circle : “;  Cin>>radius;  Circum = 2\*PI\*radius;  Area= PI\*(radius\*radius);  Cout<<” the area of the circle is : “<< area<<endl;  Cout<<” the circumference of the circle is : “<<circum<<endl;  Cout<<endl;  return 0;  End |  |  |
| **Q.3** | | **a)** | **Discuss different types of programming languages.**  **Ans:** Programming language specially developed so that you could pass your data and instructions to the computer to do specific job.  There are two major types of programming languages   * **Low Level languages:** Low level language are further divided in to Machine language and Assembly language.   **Machine language:** Machine language is only language that is directly understood by the computer. It does not need any translator program. The only advantage is that program of machine language run very fast. Consists of only 0’s and 1’s.  **Assembly language:** The next evolution in programming came with idea of replacing binary code for instruction and addresses with symbol. Because they used symbol these language were first known as symbolic languages. The set of these mnemonic language were later referred to as assembly languages. Assemble is a machine specific language. Assemble consists of both binary and simple words.   * **High Level languages:** Higher level language are simple languages that use English and mathematical symbols like +,-,%,/, etc for its program construction. Any higher level language has the be converted to machine language for the computer to understand. Higher language you have to know only the instructions in English words and logic of the problem   **For Example:** COBOL( Common Business Oriented Language) are high level language. |  |  |
|  | **b)** | **How many translators are there to translate higher level language to machine language? Discuss.**  **Ans: Compiler:** It is a Translators that translates the instruction of a higher level language to machine language. It is called compiler because it complies machine language instructions for every problem instructions of higher level language. Thus compiler is a program translator like assembler but more sophisticated. It scans the entire program first and then translates it into machine code . A compiler can translate only those source programs, which have been written, in that language.  **Interpreter:** An interpreter is another type of program translator used for translating higher level language into machine language. It takes one statement of higher level language, translates it into machine language and immediately execute it. Translation and execution are carried out for each statement. It differs from compiler, which translate the entire source program into machine code. |  |  |