## **WORK SHEET**

## **Variable, Operator and Expression** [SET – 1]

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| **1** | .Write a program to print HELLO WORLD on screen. solution  #include<iostream.h>  #include<conio.h>  int main()  {  cout<<"Hello world";  getch();  return 0;  } |
| **2** | .Write a program to display the following output using a single cout statement.     Subject            Marks    Mathematics     90     Computer         77     Chemistry        69  solution  #include<iostream.h>  #include<conio.h>  int main()  {  cout<<"subject "<<"\tmarks"<<"\nmathematic\t"  <<90<<"\ncomputer\t"<<77<<"\nchemistry\t"<<69;  getch();  return 0;  } |
| **3** | .Write a program which accept two numbers and print their sum. solution  #include<iostream.h>  #include<conio.h>  int main()  {  int a,b,c;  cout<< "\nEnter first number : ";  cin>>a;  cout<<"\nEnter second number : ";  cin>>b;  c=a+b;  cout<<"\nThe Sum is : "<<c;  getch();  return 0;  } |
| **4** | .Write a program which accept temperature in Farenheit and print it in centigrade. solution  #include<iostream.h>  #include<conio.h>  int main()  {  float F,C;  cout<< "\nEnter temperature in Farenheit : ";  cin>>F;  C=5\*(F-32)/9;  cout<<"Temperature in celcius is : "<<C;  getch();  return 0;  } |
| **5** | .Write a program which accept principle, rate and time from user and print the simple interest. solution  #include<iostream.h>  #include<conio.h>  int main()  {  int p,r,t,i;  cout<<"Enter Principle : ";  cin>>p;  cout<<"Enter Rate : ";  cin>>r;  cout<<"Enter Time : ";  cin>>t;  i=(p\*r\*t)/100;  cout<<"Simple interest is : "<<i;  getch();  return 0;  } |
| **6** | .Write a program which accepts a character and display its ASCII value. solution  #include<iostream.h>  #include<conio.h>  int main()  {  char ch;  cout<< "\nEnter any character : ";  cin>>ch;  cout<<"ASCII equivalent is : "<<(int)ch;  getch();  return 0;  } |
| **8** | .Write a program to calculate area of circle. solution  #include<iostream.h>  #include<conio.h>  int main()  {  float r,area;  cout<< "\nEnter radius of circle : ";  cin>>r;  area = 3.14\*r\*r;  cout<<"Area of circle : "<<area;  getch();  return 0;  } |
| **9** | . Write a program to check whether the given number is positive or negative (using ? : ternary operator ) solution  #include<iostream.h>  #include<conio.h>  int main()  {  int a;  cout<<"Enter any non-zero Number : ";  cin>>a;  (a>0)?cout<<"Number is positive":cout<<"Number is negative";  getch();  return 0;  } |

10. Write a program which input three numbers and display the largest number using ternary operator. solution

#include <iostream.h>

#include <conio.h>

int main()

{

int a,b,c,greatest;

cout<<"Enter three numbers : ";

cin>>a>>b>>c;

greatest=(a>b&&a>c)?a:(b>c)?b : c;

cout<<"Greatest number is "<<greatest;

getch();

return 0;

}

11. Write a program which accepts a character and display its next character. *solution*

#include<iostream.h>

#include<conio.h>

int main()

{

char ch;

cout<< "\nEnter any character : ";

cin>>ch;

ch++;

cout<<"Next character is : "<<ch;

getch();

return 0;

}

12. Write a program which accepts days as integer and display total number of years, months and days in it.  
for example :  If user input as 856 days the output should be 2 years 4 months 6 days. (Assignment)

13. Write a program to check whether the given number is even or odd (using ? : ternary operator ) solution

#include<iostream.h>

#include<conio.h>

int main()

{

int a;

cout<<"Enter the Number : ";

cin>>a;

(a%2==0)?cout<<"Number is even":cout<<"Number is odd";

getch();

return 0;

}

## **flow of control** [SET – 1]

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| **1** | Any integer is input by the user. Write a program to find out whether it is an odd number or even number. solution  #include<iostream.h>  #include<conio.h>  int main()  {  int a;  cout<<"Enter any number : ";  cin>>a;  if(a%2==0)  cout<<"The number is even";  else  cout<<"The number is odd";    getch();  return 0;  }  SAMPLE RUN # 1  Enter any number : 68 The number is even  SAMPLE RUN # 2  Enter any number : 43 The number is odd |
| **2** | Find the absolute value of a number entered by the user. solution  #include<iostream.h>  #include<conio.h>  int main()  {  int a;  cout<<"Enter any number:";  cin>>a;  if(a>0)  cout<<"The absolute value of number is:"<<a;  else  cout<<"The absolute value of number is:"<<-(a);  getch();  return 0;  }  SAMPLE RUN # 1  Enter any number:-57 The absolute value of number is:57  SAMPLE RUN # 2  Enter any number:50 The absolute value of number is:50 |
| **3** | Write a program to calculate the total expenses. Quantity and price per item are input by the user and discount of 10% is offered if the expense is more than 5000. solution  #include<iostream.h>  #include<conio.h>  int main()  {  int totalexp, qty, price, discount;  cout<<"Enter quantity:";  cin>>qty;  cout<<"Enter price:";  cin>>price;  totalexp=qty\*price;  if(totalexp>5000)  {  discount=(totalexp\*0.1);  totalexp=totalexp-discount;  }  cout<<"Total Expense is Rs. "<<totalexp;  getch();  return 0;  }  SAMPLE RUN # 1  Enter quantity:14 Enter price:300 Total Expense is Rs.4200  SAMPLE RUN # 2  Enter quantity:50 Enter price:300 Total Expense is Rs. 13500 |
| **4** | Write a program to determine whether the seller has made profit or incurred loss. Also determine how much profit he made or loss he incurred. Cost price and selling price of an item is input by the user. solution  #include<iostream.h>  #include<conio.h>  int main()  {  int cp,sp,result;  cout<<"Enter cost price of item : ";  cin>>cp;  cout<<"Enter selling price of item : ";  cin>>sp;  result=sp-cp;  if(result>0)  cout<<"Profit : "<<result;  else  if(result<0)  cout<<"Loss : "<<-(result);  else  cout<<"No profit no loss";  getch();  return 0;  }  SAMPLE RUN # 1  Enter cost price of item : 800 Enter selling price of item : 950 Profit : 150  SAMPLE RUN # 2  Enter cost price of item : 800 Enter selling price of item : 600 Loss : 200  SAMPLE RUN # 3  Enter cost price of item : 800 Enter selling price of item : 800 No profit no loss |
| **5** | If the ages of Ram, Sulabh and Ajay are input by the user, write a program to determine the youngest of the three. solution  #include<iostream.h>  #include<conio.h>  int main()  {  int ram\_age,sulabh\_age,ajay\_age;  cout<<"Enter Ram age:";  cin>>ram\_age;  cout<<"Enter Sulabh age:";  cin>>sulabh\_age;  cout<<"Enter Ajay age:";  cin>>ajay\_age;  if (ram\_age<sulabh\_age&& ram\_age<ajay\_age)  cout<<"Ram is youngest";  else if(sulabh\_age<ram\_age&& sulabh\_age<ajay\_age)  cout<<"Sulabh is youngest";  else  cout<<"Ajay is youngest";  getch();  return 0;  }  SAMPLE RUN # 1  Enter Ram age:45 Enter Sulabh age:34 Enter Ajay age:22 Ajay is youngest  SAMPLE RUN # 2  Enter Ram age:45 Enter Sulabh age:34 Enter Ajay age:39 Sulabh is youngest  SAMPLE RUN # 3  Enter Ram age:25 Enter Sulabh age:34 Enter Ajay age:29 Ram is youngest |
| **6** | Write a program to check whether a triangle is valid or not, when the three angles of the triangle are entered by the user. A triangle is valid if the sum of all the three angles is equal to 180 degrees. solution  #include<iostream.h>  #include<conio.h>  int main()  {  int angle1,angle2,angle3;  cout<<"Enter the three angles of triangle:";  cin>>angle1>>angle2>>angle3;  if (angle1+angle2+angle3==180)  cout<<"Triangle is valid";  else  cout<<"Triangle is not valid";  getch();  return 0;  }  SAMPLE RUN # 1  Enter the three angles of triangle:60 50 50 Triangle is not valid  SAMPLE RUN # 2  Enter the three angles of triangle:60 90 30 Triangle is valid |
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| **7** | In a company an employee is paid as under:  If his basic salary is less than Rs. 1500, then HRA = 10% of basic salary and DA = 90% of basic salary. If his salary is either equal to or above Rs. 1500, then HRA = Rs. 500 and DA = 98% of basic salary.  If the employee's salary is input by the user write a program to find his gross salary. solution  #include<iostream.h>  #include<conio.h>  int main()  {  float basic\_salary, gross\_salary, HRA, DA;  cout<<"Enter basic salary of Employee : ";  cin>>basic\_salary;  if (basic\_salary<1500)  {  HRA=0.1\*basic\_salary;  DA=0.9\*basic\_salary;  }  else  {  HRA=500;  DA=0.98\*basic\_salary;  }  gross\_salary=basic\_salary+HRA+DA;  cout<<"Gross salary is : "<<gross\_salary;  getch();  return 0;  }  SAMPLE RUN # 1  Enter basic salary of Employee : 1300 Gross salary is : 2600  SAMPLE RUN # 2  Enter basic salary of Employee : 2500 Gross salary is : 5450 |
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| **8** | The marks obtained by a student in 5 different subjects are input by the user. The student gets a division as per the following rules: Percentage above or equal to 60 - First division  Percentage between 50 and 59 - Second division  Percentage between 40 and 49 - Third division  Percentage less than 40 - Fail  Write a program to calculate the division obtained by the student. (Assignment) |

## **flow of control** [SET – 2]

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| **1** | Write a program to print number from 1 to 10. solution  #include<iostream.h>  #include<conio.h>  int main()  {  int i=1;  while(i<=10)  {  cout<<i<<"\n";  i++;  }  getch();  return 0;  }  1 2 3 4 5 6 7 8 9 10 |
| **2** | Write a program to calculate the sum of first 10 natural number. solution  #include<iostream.h>  #include<conio.h>  int main()  {  int i=1,sum=0;  while(i<=10)  {  sum+=i;  i++;  }  cout<<"Sum :"<<sum;  getch();  return 0;  }  Sum : 55 |
| **3** | Write a program to find the factorial value of any number entered through the keyboard. solution  #include<iostream.h>  #include<conio.h>  int main()  {  int n,fact=1;  cout<<"Enter any number : ";  cin>>n;  while(n>=1)  {  fact\*=n;  n--;  }  cout<<"Factorial :"<<fact;  getch();  return 0;  }  Enter any number : 7 Factorial : 5040 |
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| **4** | Write a program to reveres any given integer number. solution  #include<iostream.h>  #include<conio.h>  int main()  {  int n,t,r,rev=0;  cout<<"Enter any number : ";  cin>>n;  t=n;  while(t>0)  {  r=t%10;  t=t/10;  rev=rev\*10+r;  }  cout<<"Reverse of number "<<n<<" is "<<rev;  getch();  return 0;  }  Enter any number : 6329 Reverse of number 6329 is 9236 |
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| **5** | Write a program to check given number is prime or not. (Assignment) |
| **6** | Write a program to calculate HCF of Two given number. solution  #include<iostream.h>  #include<conio.h>  int main()  {  int dividend, divisor, rem, hcf;  cout<<"Enter two numbers : ";  cin>>dividend>>divisor;  while(rem!=0)  {  rem=dividend%divisor;  if(rem==0)  hcf=divisor;  else  {  dividend=divisor;  divisor=rem;  }  }  cout<<"HCF is : "<<hcf;  getch();  return 0;  }  Enter two numbers : 30 105 HCF is : 15 |
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| **7** | Write a program to enter the numbers till the user wants and at the end it should display the maximum and minimum number entered. solution  #include<iostream.h>  #include<conio.h>  int main()  {  int n, max=0, min=32767;  char choice;  do  {  cout<<"Enter number : ";  cin>>n;  if(n>max)  max=n;  if(n<min)  min=n;  cout<<"Do you want to Continue(y/n)? ";  cin>>choice;  }while(choice=='y' || choice=='Y');  cout<<"Maximum Number :"<<max<<"\nMinimum Number :"<<min;  getch();  return 0;  }  Enter number :34 Do you want to Continue(y/n)? y Enter number : 88 Do you want to Continue(y/n)? y Enter number : 3 Do you want to Continue(y/n)? y Enter number : 54 Do you want to Continue(y/n)? y Enter number : 41 Do you want to Continue(y/n)? y Enter number : 20 Do you want to Continue(y/n)? n  Maximum Number :88 Minimum Number :3 |
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| **8** | Write a program to calculate the sum of following series where n is input by user.  1 + 1/2 + 1/3 + 1/4 + 1/5 +…………1/n solution  #include<iostream.h>  #include<conio.h>  int main()  {  int i,n;  float sum=0;  cout<<"Enter the value of n ";  cin>>n;  for(i=1;i<=n;i++)  sum += 1.0/i;  cout<<"Sum : "<<sum;  getch();  return 0;  }  Enter the value of n 5 Sum : 2.28333 |
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## Flow of Control [SET – 3]

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| **1** | Write a program to print following : *solution* | | | | | |
|  | **i)** | \*\*\*\*\*\*\*\*\*\* \*\*\*\*\*\*\*\*\*\* \*\*\*\*\*\*\*\*\*\* \*\*\*\*\*\*\*\*\*\* | **ii)** | \* \*\* \*\*\* \*\*\*\* \*\*\*\*\* |  |  |
|  | **iii)** | \*       \*\*     \*\*\* (Assignment)   \*\*\*\* \*\*\*\*\*  //Solution of (i)  #include<iostream.h>  #include<conio.h>  int main()  {  int i,j;  for(i=1;i<=4;i++)  {  for(j=1;j<=10;j++)  cout<<'\*';  cout<<endl;  }  getch();  return 0;  }  //Solution of (ii)  #include<iostream.h>  #include<conio.h>  int main()  {  int i,j;  for(i=1;i<=5;i++)  {  for(j=1;j<=i;j++)  cout<<'\*';  cout<<endl;  }  getch();  return 0;  } |  |  |  |  |