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BtechCS

Section-AY-2

CprogrammingAssignment.

Q1.WriteaCprogramforcalculatingthepriceofaproductafter addingthesalestaxtoitsoriginalprice.Whererateoftaxandpric eisinputtedbyuser.

: #include<stdio.h>

intmain(){

   //Declarevariables

   floatoriginalPrice,taxRate,totalPrice;

   // Input the original price and tax

   rateprintf("Entertheoriginalpriceoftheproduct:");s

   canf("%f",&originalPrice);

Q2.WriteaCprogramtocalculatetheweeklywagesofanemp loyee.Thepaydependsonwagesperhourand number of hours worked. Moreover, if theemployee has worked for more than 30 hours, thenhe or she gets twice the wages per hour, for everyextrahourthatheorshehasworked.

:#include<stdio.h>

```c
intmain(){
    //Declarevariables
    floatwagesPerHour,hoursWorked,weeklyWages;

    //Inputthewagesperhourandhoursworkedprintf("E
    nterthewagesperhour:");scanf("%f",&wagesPerH
    our);

    printf("Enterthenumberofhoursworked:");scanf("%f
    ",&hoursWorked);

    //Calculateweeklywagesif(ho
    ursWorked<=30){
        weeklyWages=wagesPerHour*hoursWorked;
    }else{
        weeklyWages=(wagesPerHour*30)+(wagesPerHour*2*(h
oursWorked-30));
    }

    //Displaytheweeklywages
    printf("Theweeklywagesoftheemployeeis:
%.2f\n",weeklyWages);

    return 0;
```

```
}
```

Q3.Mr.Xgoestomarketforbuyingsomefruitsandvegetables. HeishavingacurrencyofRs500withhimformarketing.From ashop,hepurchases2.0kgApple priced Rs. 50.0 per kg, 1.5 kg Mango pricedRs.35.0perkg,2.5kgPotatopricedRs.10.0perkg,and 1.0 kg Tomato priced Rs.15 per kg. He gives thecurrency of Rs. 500 to the shopkeeper. Find out theamountshopkeeperwillreturntoXbywritingaCprogr am.

:

```
#include<stdio.h>

intmain(){
    //Declarevariables
    floatcurrencyWithMrX=500.0;floa
    t applePricePerKg = 50.0;float
    mangoPricePerKg = 35.0;float
    potatoPricePerKg = 10.0;float
    tomatoPricePerKg = 15.0;float
    totalAmountSpent;

    //Calculatethetotalamountspent
    float appleCost = 2.0 *
    applePricePerKg;floatmangoCost=1.5*mango
    PricePerKg;float potatoCost = 2.5 *
    potatoPricePerKg;floattomatoCost=1.0*tomat
    oPricePerKg;
```

```c
    totalAmountSpent=appleCost+mangoCost+potatoCost+tomatoCost;

    //Calculatetheamounttobereturned

    floatamountToReturn=currencyWithMrX-totalAmountSpent;

    //Displaytheamounttobereturned

    printf("TheshopkeeperwillreturnRs.%.2ftoMr.X\n",amountToReturn);

    return 0;
}
```

Q4.WriteaCprogramtoprintyourname,dateofbirthandmobilenumberin3differentlines.

:

```c
#include<stdio.h>

intmain(){
    //Declarevariables
    charname[]="YourName";
    chardateOfBirth[]="YourDateofBirth";
    charmobileNumber[]="YourMobileNumber";

    //Printname
```

```c
    printf("Name: %s\n", name);

    //Printdateofbirth
    printf("DateofBirth:%s\n",dateOfBirth);

    //Printmobilenumber
    printf("MobileNumber:%s\n",mobileNumber);

    return 0;
}
```

Q5.Write a program to read an integer, a characterandafloatvaluefromkeyboardanddisplaythesameindifferentlinesonthescreen.

:

```c
#include<stdio.h>

intmain(){
    // Declare
    variablesintintValue
    ;
    charcharValue;float
    floatValue;

    //Input
    anintegerprintf("Enteranintege
    r:");
```

```c
    scanf("%d",&intValue);


    //Inputacharacterprintf("Entera
    character:");
    scanf("%c",&charValue);//Notethespacebefore
%ctoconsumeanynewlinecharacters.


    //Input a float
    valueprintf("Enterafloatvalue:");s
    canf("%f",&floatValue);


    //Displaythevaluesonseparatelinesprintf("Integer:
    %d\n",intValue);printf("Character:%c\n",charVa
    lue);printf("Float:%.2f\n",floatValue);


    return 0;
}
```

Q6.Writeaprogramtoprintthefollowingline(Assumetheto
talvalueiscontainedinavariablenamedcost)

:

```c
#include<stdio.h>


intmain(){
```

```c
    //Declareandinitializethecostvariable

    floatcost=100.50;//Youcanreplacethiswithyourdesiredvalue

    //Printthelinewiththecostvariableembeddedprintf("Thetot

    alcostis:$%.2f\n",cost);

    return 0;
}
```

Q7.Raju got 6and halfapples fromeach of Raghu,SheenuandAkash.Hewantstoknowhowmanyapple shehasintotalwithoutaddingthem.Writeaprogramwhichc ouldhelpRajuindoingthis.

:

```c
#include<stdio.h>

intmain(){
    //NumberofapplesreceivedfromeachpersonfloatapplesFr
    omRaghu=6.5;
    floatapplesFromSheenu=6.5;floata
    pplesFromAkash=6.5;

    //Calculatethetotalnumberofappleswithoutaddingthem
```

```c
    float totalApples = applesFromRaghu
+applesFromSheenu+applesFromAkash;


    //Displaythetotalnumberofapples

    printf("Rajuhas%.1fapplesintotalwithoutaddingthem.\n"
,totalApples);


    return 0;
}
```

Q8.Write a program that prints the floating pointvalueinexponentialformatcorrecttotwodecimalplaces.

:

```c
#include<stdio.h>


intmain(){

    //Declareandinitializeafloating-

    pointvaluefloatfloatValue=1234.56789;


    //Printthefloating-
pointvalueinexponentialformatwithtwodecimalplaces

    printf("Valueinexponentialformat:%.2e\n",floatValue);


    return0;
}
```

Q9. Write a program to input and print your mobile number (i.e. of 10 digits).

:

```c
#include<stdio.h>

int main(){
    //Declare a variable to store the mobile number long long int
    mobileNumber;

    //Input the mobile number
    printf("Enter your 10-digit mobile number:");scanf("%lld",&mobileNumber);

    // Check if the mobile number has exactly 10
    digitsif(mobileNumber>= 1000000000LL&& mobileNumber<=9999999999LL){
        //Display the mobile number printf("Your mobile number is:%lld\n", mobileNumber);
    }else{
        printf("Invalid input. Please enter a 10-digit mobile number.\n");
    }

    return 0;
}
```

**Q10..The population of a city is 30000. It increases by 20 %
during first year and 30% during the second year.
Write a program to find the population
after two years? (Ans:46800)**

:

#include<stdio.h>

int main(){

   //Initial population

   int initialPopulation= 30000;

   //Calculate the population after the first year(20% increase)

   int populationAfterFirstYear=initialPopulation+(initialPopulation*20 /100);

   //Calculate the population after the second year(30% increase)

   int populationAfterSecondYear=populationAfterFirstYear+(populationAfterFirstYear*30/100);

   **//Display the population after two years printf("Population after two years:%d\n",
populationAfterSecondYear);**

   return 0;

}

Q11. Write a program to find the ASCII value of a character.

:

```c
#include<stdio.h>

int main(){
    //Declare a variable to store the character char character;

    //Input a character from the user printf("Enter a character:");scanf("%c",&character);

    // Calculate and display the ASCII value of the character
    printf("The ASCII value of '%c' is %d\n",character,character);

    return 0;
}
```

Q12. Write a program to calculate salary of an employee, given his basic pay (entered by user), HRA=15% of the basic pay and TA=20% of the basic pay.

:

```c
#include<stdio.h>

intmain(){
   //Declarevariables
   floatbasicPay,HRA,TA,salary;

   //Inputthebasic payfrom
   theuserprintf("Enterthebasicpay:");scanf
   ("%f",&basicPay);

   //CalculateHRAandTA
   HRA=0.15*basicPay;//15%ofbasicpayTA=0.20
   *basicPay;//20%ofbasicpay

   //Calculatethetotalsalarysalary=
   basicPay+HRA+TA;

   //Displaythetotalsalary
   printf("Salaryoftheemployeeis:%.2f\n",salary);

   return 0;
}
```
Q13.Writeaprogramtofindtheslopeofalineandangleofincli
nationthatpassesthroughtwopointsP

andQwithcoordinates(xp,yp)and(xq,yq)respectively.

:

```c
#include<stdio.h>#incl
ude<math.h>

intmain(){
  //DeclarevariablesforthecoordinatesofpointsPandQ
  doublexp,yp,xq,yq;

  //Inputcoordinatesfromtheuser
  printf("EnterthecoordinatesofpointP(xpyp):");scanf("%l
f %lf",&xp, &yp);

  printf("EnterthecoordinatesofpointQ(xqyq):");scanf("%l
f %lf",&xq, &yq);

  //Calculatetheslope
  doubleslope=(yq-yp)/(xq-xp);

  //Calculatetheangleofinclination(indegrees)doubleangleI
nDegrees=atan(slope)*180/M_PI;

  //Displaytheresults
```

```c
    printf("TheslopeofthelinepassingthroughPandQis:%.
2lf\n",slope);

    printf("Theangleofinclination(indegrees)is:
%.2lf\n",angleInDegrees);


    return 0;

}
```

Q14.The SPI (Semester Performance Index) is aweightedaverageofthegradepointsearnedbyastudentinallthecoursesheregisteredforinasemester. If the grade points associated with the lettergrades awarded to a student are g1, g2, g3,……gk etc.andthecorrespondingcreditsarec1,c2,c3,. ....ck,the SPIisgivenby:

:

```c
#include<stdio.h>


intmain(){

    //Definethenumberofcourses(k=5)intk=5;


    //Definearraysforgradepointsandcreditsforeachcourse

    doublegradePoints[k]={3.5,4.0,3.7,3.2,3.9};

    intcredits[k]={3,4,3,2,4};


    //CalculateSPI
```

```c
    doubletotalGradePoints=0.0;inttot
    alCredits=0;

    for(inti=0;i<k;i++){
        totalGradePoints+=gradePoints[i]*credits[i];totalCredi
        ts += credits[i];
    }

    doublespi=totalGradePoints/totalCredits;

    //Display SPI
    printf("TheSemesterPerformanceIndex(SPI)for
%dcoursesis:%.2lf\n",k,spi);

    return 0;
}
```

Q15.Writeaprogramtocalculatethefrequency(f)ofa given wave with wavelength (λ) and speed (c),where c=λ*f.

:

```c
#include<stdio.h>

intmain(){
    //Declarevariablesforspeed(c)andwavelength($\lambda$)doublespe
    edOfWave,wavelengthOfWave;
```

```c
//Inputthespeedofthewaveprintf("Enterthespe
edofthewave(c):");scanf("%lf",&speedOfWav
e);


//Inputthewavelengthofthewaveprintf("Enterthewa
velengthofthewave(λ):");scanf("%lf",&wavelength
OfWave);


//Calculatethefrequency(f)
doublefrequencyOfWave=speedOfWave/wavelengthOfW
ave;


//Displaythefrequency
printf("Thefrequencyofthewave(f)is:%.2lf\n",frequency
OfWave);


return 0;
}
```

Q16.Acartravellingat30m/sacceleratessteadilyat5m/s2 for a distance of 70 m. What is the final velocityof thecar? [Hint: v2 = u2 + 2as]

:

```c
#include<stdio.h>#incl
ude<math.h>
```

```c
intmain(){
    //Declarevariables
    doubleinitialVelocity=30.0;//initialvelocityinm/sdoubleaccele
    ration=5.0;//accelerationinm/s^2doubledistance=70.0;//dista
    nceinmeters
    doublefinalVelocity;

    //Calculatethefinalvelocityusingthekinematicequation
    finalVelocity = sqrt(pow(initialVelocity, 2) + 2
*acceleration* distance);

    //Displaythefinalvelocity
    printf("Thefinalvelocityofthecaris%.2fm/s\n",finalVelocit
y);

    return 0;
}
```

Q17..A horse accelerates steadily from rest at 4 m/s2for
3s.(a) Whatis itsfinalvelocity? (b)How farhas
ittravelled?[Hint:(a)v=u+at(b)s=ut+½at2]

:

```c
#include<stdio.h>

intmain(){
    //Givenvalues
```

```c
    doubleacceleration=4.0;//Accelerationinm/s^2doubletime=3

    .0;//Timeinseconds

    doubleinitialVelocity=0.0;//Initialvelocity(atrest)


    //(a)Calculatethefinalvelocityusingtheformulav
=u+at

    doublefinalVelocity=initialVelocity+(acceleration
*time);


    //(b)Calculatethedistancetraveledusingtheformulas=ut+0
.5*at^2

    doubledistanceTraveled=(initialVelocity*time)+(0.5*acce
leration*time*time);


    //Displaytheresults

    printf("(a)Thefinalvelocityofthehorseis%.2fm/s\n",finalV
elocity);

    printf("(b)Thehorsehastraveledadistanceof%.2fmeters\n
",distanceTraveled);


    return 0;

}
```

Q18.Writeaprogramtofindthesumofyourfourlastdigitofyo
uruniversityrollnumber.

:

```c
#include<stdio.h>
```

```c
int main(){
    //Declare a variable to store the integer(roll number)
    int rollNumber;

    //Input the integer  (roll
    number)printf("Enter your university roll number
    :");scanf("%d",&rollNumber);

    //Extract and sum the last four digits
    int lastFourDigits = rollNumber % 10000; // Get
theremainderwhendividedby10,000
    int sum=0;

    while(lastFourDigits>0){
        sum+=lastFourDigits%10;//Add the last digit to the sum
        lastFourDigits/=10;//Remove the last digit
    }

    // Display the sum of the last four
    digitsprintf("Thesumofthelastfourdigitsofyourroll
numberis:%d\n",sum);

    return 0;
```

```
}
```

Q19.Writeaprogramtoinitializeyourheightandweightincm.
andkgsrespectivelydemonstratingcompiletimeinitializatio
nandconverttheminfeetsandpoundsrespectively.Note:-
1cm=0.393701inch,1Kg=2.20462

:

```
#include<stdio.h>


intmain(){

    //Initializeheightincentimetersandweightinkilograms

    double heightInCm = 175.0; // Replace with
yourheight in cm

    double weightInKg = 70.0; // Replace with yourweight
in kg


    //Conversionfactors

    doublecmToInch=0.393701;double

    kgToPound=2.20462;


    //Converttheightfromcmtofeet

    doubleheightInFeet=heightInCm*cmToInch/12.0;


    //Convertweightfromkgtopounds

    doubleweightInPounds=weightInKg*kgToPound;
```

```
    //Displaytheconvertedvalues

    printf("Height: %.2f cm is equivalent to %.2f
feet\n",heightInCm, heightInFeet);

    printf("Weight:%.2fkgisequivalentto%.2fpounds\n",
weightInKg,weightInPounds);


    return 0;

}
```

Q20.Codethevariabledeclarationsforeachoffollowing:

A. Acharactervariablenamedoption.

B. Anintegervariablesuminitializedto0

C. Afloatingpointvariable,product,initializedto1

:

A. Acharactervariablenamedoption:charoption;

B. Anintegervariablesuminitializedto0:intsum=0;

**C.Afloating-point variable product initialized
to1:floatproduct=1.0;**

**Q21.Writeaprogramthatreadsnineintegers.Displaythesenum
bersbyprintingthreenumbersinalineseparatedby commas.**

:

#include<stdio.h>

intmain(){

```c
    intnumbers[9];//Arraytostorethenineintegers

    //Inputnineintegers
    printf("Enternineintegers,oneatatime:\n");for(in
    ti=0;i<9;i++){
       scanf("%d",&numbers[i]);
    }

    // Display the numbers in sets of
    threeprintf("Numbers in sets of
    three:\n");for(inti=0;i<9;i++){
       printf("%d",numbers[i]);

       //Printacommaandnewlineeverythreenumbers
       if((i+1)%3==0){
          printf("\n");
       }else{
          printf(",");
       }
    }

    return 0;
}
```

Q22..WhatareheaderfilesandwhatareitsusesinCprogramming?

:

HeaderfilesinCprogrammingarefilesthatcontaindeclarationsanddefinitionsneededforaprogramtointeract with certain features or functions providedby the C standard library or other libraries. Thesefiles typically have a .h extension and containinformationaboutfunctions,datatypes,macros,and othersymbols.HeaderfilesserveseveralimportantpurposesinCprogramming:

Q23.Whatwillbetheoutputoffollowingprogram?#include<stdio.h>

intmain()

{ int

num=070;printf(“%d\t%o\t%x”,num,num,num);

}

:

So,thecorrectedoutputoftheprogramwillbe:567046

Q24.Whatwillbetheoutputoffollowingprogram?#include<stdio.h>

voidmain()

{

intx=printf("GLAUNIVERSITY");printf("%d

   ", x);

   }

Q25.Whatarelibraryfunctions?Listanyfourlibraryfunctions.

:

**Libraryfunctions,alsoknownasstandardlibraryfunctionso
rbuilt-
infunctions,arepredefinedfunctionsthatarepartoftheCstan
dardlibraryorotherlibrariesandcanbeusedinCprogramsto
performcommontaskswithouttheneedforwritingcustom
code. These functions are designed to
provideawiderangeoffunctionality,frominput/outputoper
ationstomathematicalcalculationsandmore.**

Printf()sc

anf()star

ken()

Q26.Whatwillbetheoutputoffollowingprogram?#include<st

dio.h>

voidmain()

{

   **intx=printf("CisplacementorientedLanguage")–
printf("Hi");**

   printf("%d%o%x",x,x,x);

  }

:

So,theoutputofthecorrectedprogramwillbe:29351d

Q27. What is the meaning of following statement? printf("%d",scanf("%d%d",&a,&b));

:

scanf("%d%d",&a,&b);: This part of the statement uses the scanf function to read two integer values from the standard input (usually the keyboard). The format specifier "%d%d" specifies that it expects two integers separated by whitespace. The values are read into the variables a and b.

printf("%d", ...);: This part of the statement uses the printf function to print a value. In this case, it's trying to print the return value of the scanf function.

Q28. What will be the output of following program? #include<stdio.h>

voidmain()

{

  printf("\"C%%FOR%%PLACEMENT\"");

}

:

"C%FOR%PLACEMENT"

Q29. Suppose distance between GLA University and Delhi is m km (to be entered by user), by BUS you can reach Delhi in 4 hours. Develop a 'C' program to calculate speed of bus.

:

#include<stdio.h>

intmain(){

```c
    double distance; // Distance in kilometers
    double time = 4.0; // Time in hours (known to be 4hours)

    // Input the distance from the user
    printf("Enter the distance between GLA University and Delhi (in kilometers):");
    scanf("%lf",&distance);

    // Calculate the speed (speed=distance/time) double speed = distance/time;

    // Display the speed of the bus
    printf("The speed of the bus is %.2lf km/h\n",speed);

    return 0;
}
```

Q30. In an exam Satyam got 50 marks, Suman got 70marks and Shyam got 80 marks, Write a 'C' program to find average marks of these three participants.

:

```c
#include<stdio.h>

int main(){
    // Marks obtained by Satyam, Suman, and Shyam
```

```c
    int    satyamMarks =
    50;int sumanMarks =
    70;intshyamMarks=80;


    //Calculatethetotalmarks

    inttotalMarks=satyamMarks+sumanMarks+shyamMark
s;


    //Calculatetheaveragemarks

    floataverageMarks=(float)totalMarks/3;//Usingfloatforac
curatedivision


    //Displaytheaveragemarks

    printf("TheaveragemarksofSatyam,Suman,andShyam
is:%.2f\n",averageMarks);


    return 0;
}
```

Q31.One day, Mohancalled Sauravand Sajaland gavesomemoneytothem,laterherealizedthatmoneythatwas giventoSauravshouldbegiventoSajalandvice-versa. Developa'C'programtohelpMohansothathe can rectify his mistake.

:

```c
#include<stdio.h>


intmain(){
```

```c
    intsauravMoney,sajalMoney,temp;

    //Inputtheinitialamountsofmoney
    printf("EntertheamountofmoneygiventoSaurav:");
    scanf("%d",&sauravMoney);

    printf("EntertheamountofmoneygiventoSajal:");
    scanf("%d",&sajalMoney);

    //Swapthemoneyamountsusingatemporaryvariable
    temp=sauravMoney;sauravMoney
    =sajalMoney;sajalMoney = temp;

    // Display the corrected amounts of
    moneyprintf("After rectifying the
    mistake:\n");printf("MoneygiventoSaurav:%d\n",
sauravMoney);
    printf("MoneygiventoSajal:%d\n",sajalMoney);

    return 0;
}
```

Q32. One day when I was going for a lunch, suddenly rain started, I was very hungry so started running with speed of 4km/h and it took 3 min to reach mess. Help me to develop a 'C' program to calculate distance travelled by me.

:

```c
#include<stdio.h>

int main(){
    double speed_kmph=4.0;//Speed in kilometers per hour
    double time_hr=3.0/60.0;//Time in hours (3 minutes converted to hours)

    //Calculate the distance traveled
    double distance_km=speed_kmph*time_hr;

    //Display the distance
    printf("The distance traveled is %.2f kilometers\n",distance_km);

    return 0;
}
```

Q33. Can two or more escape sequences such as \n and \t be combined in a single line of program code?

:

```c
printf("Hello,\n\tWorld!\n");
```

34. WhatarecommentsandhowdoyouinsertitinacCprogram?

:

CommentsinCareexplanatorynotesorannotations that are added to the source code to **provideinformation,explanations,ordescriptionstomaket he code more understandable to developers(including yourself) and to document the code'sfunctionality.Commentsareignoredbythecompilera nddonotaffectttheprogram'sexecution;theyexistsolelyforh umanreadability.**

InC,therearetwotypesofcomments:

Single-linecomments:Thesecommentsareusedforaddingexplanati onsornotesonasingleline.Theybeginwith//andcontinueuntilt heendoftheline.

//Thisisasingle-linecomment

intx=10;//Thiscommentexplainsthepurposeofthisvariable

Multi-line comments: These comments can spanmultiplelinesandareenclosedwithin/*and*/.Theyarety picallyusedforlongerexplanationsorforcommenting out entire blocks of code.

/*Thisis amulti-line comment.

  Itcanspanmultiplelinesandisusefulforprov

  idingdetailedexplanations.*/

inty=20;

Q35.What is wrong in this statement?scanf("%d",number);

:

The statement scanf("%d", number); has a minor issue in its format specifier. In C, the scanf function expects a pointer to the variable where it should store the input value. However, in the provided statement, number is not a pointer; it's just a variable. To correct the statement, you should use the address-of operator(&) to provide the memory address of the number variable to scanf, like this:

scanf("%d",&number);Q36.Wha

twillbetheoutput?

```
#include
<stdio.h>intmain()
{
   if(sizeof(int)>-
      1)printf("Yes");
   else
      printf("No");retu
   rn0;
}
```

:

Theoutputofthegivenprogramwillbe"Yes."Q37.

:

Amongtheprovidedvariablenames,theinvalidonesare:gros s-salary:Variablenamescannotcontainhyphens("-").Youcanuseunderscores(_)insteadif

needed.Forexample,gross_salarywouldbeavalidalternative.

avg.:Variablenamescannotcontainaperiod(dot).Removeth eperiodtomakeitvalid,likeavgwouldbea validvariablename.

thereisbookinmysoup:Thisvariablenameisvalid.Itconsist sofalphanumericcharacterswithoutanyspaces or special characters, and it doesn't start withadigit.

Q38.TomworksatanaquariumshoponSaturdays.One Saturday, when Tom gets to work,he is asked toclean a 175-gallon reef tank. His first job is to drainthe tank.He putsahose intothetank andstartsasiphon.Tomwondersifthetankwillfinishdrainin gbeforeheleaveswork.Hemeasurestheamountofwaterthati sdrainingoutandfindsthat12.5gallonsdrain out in 30 minutes. So, he figures that the rate is25gallonsperhour.Developa'C'programtohelpTomtocal culatetimerequiredtocompletelycleantank.

:

```c
#include<stdio.h>


intmain(){

   doublevolume=175.0;//Volumeofthetankingallons

   doublerate=25.0;//Drainrateingallonsperhour


   //Calculatethetimerequiredtodrainthetankcompletely

   doubletime_hours=volume/rate;
```

```c
   //Displaythetimerequiredinhours
   printf("Timerequiredtocompletelycleanthetank: %.2fhours\n",time_hours);

   return 0;
}
```

Q39.Thepercenty(indecimalform)ofbatterypowerremaining x hours after you turn on a laptop computer is $y = -0.2x + 1$. Develop a 'C' program tocalculateafterhowmanyhoursthebatterypowerisat75%?

:

```c
#include<stdio.h>

intmain(){
   doubledesiredPower=0.75;//75%batterypowerasadecimal
   doublex;//Numberofhours

   //Solveforxusingtheequation:y=-0.2x+1
   //Rearrangetofindx:x=(1-y)/0.2x=(1.0-
   desiredPower)/0.2;

   //Displaytheresult
   printf("Thebatterypowerwillbeat75%%after %.2fhours.\n",x);
```

```
    return 0;
}
```

**Q40.Whichofthefollowingisusedtoconvertthehighlevellan
guageinmachinelanguageinasinglego?**

a.Compiler   b.Interpreter

c.Linker   d.Assembler

:

a.Compiler

Q41.WhatistheformatspecifierforanOctalNumber?

a.%0   b.%d

c.%o   d.%

:

c.%o

**Q42.Whichformatspecifierisusedtoprinttheexponent
valueupto2decimalplaces.**

a.%e. b.%.2f. c.%f   d.%.2e

:

d.%.2e

Q43.Whichofthefollowingisnotabasicdatatype?

a. char

b. array

c. float

d. int

:

b.array

Q44.What is the output of following code?#include<stdio.h>

voidmain()

{

  intx=0;

  x=

  printf("\"hello\b\"");printf("

  %d",x);

}

a.hello7   b."hello"7.   c."hell"8.   d.hell8

:

c."hell"8

Whatistheoutputoffollowingcode?#include<stdio.h>

voidmain()

{

  intb,c=5;

  int("%d,%d",b,c);

}

a.5,5.   b.5,5.000000

c.Garbage,5.000000d.Garbage,5

:

d.Garbage,5

Q46. Which of the following is an identifier?

a. &fact. b. Basic_pay. c. enum. d. 1sum

:

C. enum

Q47. What is the output of the following program? #include<stdi

o.h>

voidmain()

{

  char x,

  a='c'; x=printf("%c"

  ,a);

  printf("%d",x);

}

a. c1. b. cgarbage

c. 1   c. c

:

C. 1

Q48. Perform the following conversion from Decimal to other number as directed-

A. (365.55)10=(?)2

B. (453.65)10=(?)8

C. (5164.12)10=(?)16

D. (23.65)10=(?)5

E. (772)10=(?)7

:

(365.55)10=(101101101.10011)2

(453.65)10=(705.52)8

(5164.12)10=(1424.28)16(23.65)10=(43.1)5

(772)10=(1664)7

Q49.convertthefollowingnumberstodecimalnumbersyste m-

(325.54)6=(?)10

(1001010110101.1110101)2=(?)10

(742.72)8=(?)10

(AC94.C5)16=(?)10

:

(325.54)6=(179.08333333)10(approximately) (1001010110101.1110101)2=(4781.9765625)10 (approximately)(742.72)8=(482.875)10(AC94.C5)16=(44

116.7734375)10(approximately)

Q50.PerformthefollowingconversionfromHexadecimaltooth ernumberasdirected-

 (DB56.CD4)16=(?)2,(?)8,(?)4

:

(DB56.CD4)16=(1101101101010110.110011010100)2

(DB56.CD4)16= (33566.6413125)8

(DB56.CD4)16= (56222.803125)10

Q51.Performthefollowingconversionfromoctaltoother numberas directed-

(473.42)8=(?)2,(?)10,(?)16,(?)5

:

(473.42)8=(1001110011.010)2

(473.42)8=(315.25)10

(473.42)8=(1A3.2)16

(473.42)8=(1333.21)5

Q52.Find the value of

A?(23)10=(17)A

(21)16=(41)A

(32)8=(101)A

:

A≈1.35

A≈0.51

A≈0.32

Q53.Whatwillbetheoutputoffollowingprogram? Assumeintegerisof2bytesvoid

main(){

int

a=32770;printf("%d",

a);

}

:

Inthegivenprogram,youareassigningthevalue32770 to an integer variable 'a'. Since you'vementioned that an integer is assumed to be 2 bytes,thisprogramcanresultinanoverflowbecausethevalue32770isoutsidetherangethata2-byteintegercanhold.

Q54.#include<stdio.h>int

 main()

```c
{
float c =5.0;
printf("TemperatureinFahrenheitis%.2f",(9/5)*c+32);
return 0;
}
```
:
(9/5)*c+32