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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>

```
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;
```

```
    totalAmountSpent=appleCost+mangoCost+potatoCost+t
omatoCost;


    //Calculatetheamounttobereturned

    floatamountToReturn=currencyWithMrX-
totalAmountSpent;


    //Displaytheamounttobereturned

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


    return 0;

}
```

Q4.WriteaCprogramtoprintyourname,dateofbirthan dmobilenumberin3differentlines.

:

```
#include<stdio.h>


intmain(){

    //Declarevariables

    charname[]="YourName";

    chardateOfBirth[]="YourDateofBirth";

    charmobileNumber[]="YourMobileNumber";


    //Printname
```

```
    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.

:

```
#include<stdio.h>

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

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

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)

:

#include<stdio.h>

intmain(){

```
    //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.

:

```
#include<stdio.h>

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

    //Calculatethetotalnumberofappleswithoutaddingthem
```

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


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


    return 0;
}
```

Q8.Write a program that prints the floating pointvalueinexponentialformatcorrecttotwodecimalpl aces.

:

```
#include<stdio.h>


intmain(){
    //Declareandinitializeafloating-
    pointvaluefloatfloatValue=1234.56789;


    //Printthefloating-
pointvalueinexponentialformatwithtwodecimalplaces
    printf("Valueinexponentialformat:%.2e\n",floatValue);


    return0;
}
```

Q9.Writeaprogramtoinputandprintyourmobilenumber(i .e.of10digits).

:

```
#include<stdio.h>


intmain(){
   //Declareavariabletostorethemobilenumberlonglongint
   mobileNumber;


   //Inputthemobilenumber
   printf("Enteryour10-
   digitmobilenumber:");scanf("%lld",&mobileNumber);


   // Check if the mobile number has exactly 10
   digitsif(mobileNumber>= 1000000000LL&&
mobileNumber<=9999999999LL){
      //Displaythemobilenumberprintf("Yourm
      obilenumberis:%lld\n",
mobileNumber);
   }else{
      printf("Invalidinput.Pleaseentera10-
digitmobilenumber.\n");
   }


   return 0;
}
```

Q10..Thepopulationofacityis30000.Itincreasesby20 % during first year and 30% during the secondyear. Write a program to find the population aftertwoyears?(Ans:46800)

:

```
#include<stdio.h>


intmain(){
   //Initialpopulation
   int initialPopulation= 30000;


   //Calculatethepopulationafterthefirstyear(20%increas
e)
   intpopulationAfterFirstYear=initialPopulation+(initia
lPopulation*20 /100);


   //Calculate the population afterthe second
year(30%increase)
   int
populationAfterSecondYear=populationAfterFirstYear+(
populationAfterFirstYear
*30/100);


   //Displaythepopulationaftertwoyearsprintf("Populationafte
   rtwoyears:%d\n",
populationAfterSecondYear);


   return 0;
```

}

Q11.WriteaprogramtofindtheASCIIvalueofacharacter.

:

```
#include<stdio.h>


intmain(){
   //Declareavariabletostorethecharactercharchara
   cter;


   //Inputacharacterfromtheuserprintf("Ent
   eracharacter:");scanf("%c",&character)
   ;


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


   return0;
}
```

Q12.Writeaprogramtocalculatesalaryofanemployee,giv enhisbasicpay(enteredbyuser),HRA=15% of the basic pay and TA=20% of the basicpay.

:

```
#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.

:

```
#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
```

```
   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:

:

```
#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
```

```
    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),wherec=λ*f.

:

```
#include<stdio.h>

intmain(){
    //Declarevariablesforspeed(c)andwavelength(λ)doublespe
    edOfWave,wavelengthOfWave;
```

```
    //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]

:

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

```
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]

:

```
#include<stdio.h>


intmain(){
   //Givenvalues
```

```
    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.

:

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

```
intmain(){
   //Declareavariabletostoretheinteger(rollnumber)
   introllNumber;

   //Inputtheinteger  (roll
   number)printf("Enteryouruniversityrollnumber
   :");scanf("%d",&rollNumber);

   //Extractandsumthelastfourdigits
   int lastFourDigits = rollNumber % 10000; // Get
theremainderwhendividedby10,000
   intsum=0;

   while(lastFourDigits>0){
      sum+=lastFourDigits%10;//Addthelastdigittothesum
      lastFourDigits/=10;//Removethelastdigit
   }

   // 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;


   //Convertheightfromcmtofeet
   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.Displaythesenumbersbyprintingthreenumbersinalineseparatedby commas.

:

#include<stdio.h>

intmain(){

```
    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..Whatareheaderfilesandwhatareitsusesin Cprogrammi ng?

:

HeaderfilesinCprogrammingarefilesthatcontaindeclara tionsanddefinitionsneededforaprogramtointeract 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.Headerfilesserveseveralimportantpurposesi nCprogramming:

Q23.Whatwillbetheoutputoffollowingprogram?#include<std

io.h>

intmain()

{ int

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

}

:

So,thecorrectedoutputoftheprogramwillbe:567046

Q24.Whatwillbetheoutputoffollowingprogram?#include<st

dio.h>

voidmain()

{

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

", x);

}

:

GLAUNIVERSITY14

Q25.Whatarelibraryfunctions?Listanyfourlibraryfunctions.

:

Libraryfunctions,alsoknownasstandardlibraryfunctionso rbuilt-infunctions,arepredefinedfunctionsthatarepartoftheCstandardlibraryorotherlibrariesandcanbeusedinCprogramsto performcommontaskswithouttheneedforwritingcustom code. These functions are designed to provideawiderangeoffunctionality,frominput/outputoperationstomathematicalcalculationsandmore.

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 isthe meaningoffollowing statement?printf(“%d”,scanf(“%d%d”,&a,&b));

:

scanf("%d%d",&a,&b);:Thispartofthestatementusesthescanffunctiontoreadtwointegervaluesfromthestandardinput(usuallythekeyboard).Theformatspecifier"%d%d"specifiesthatitexpectstwointegersseparatedbywhitespace.Thevaluesarereadinto thevariables aandb.

printf("%d", ...);: This part of the statement uses theprintffunctiontoprintavalue.Inthiscase,it'stryingtoprintthereturnvalueofthescanffunction.

Q28.Whatwillbetheoutputoffollowingprogram?#include<stdio.h>

```
voidmain()
{
  printf("\"C%%FOR%%PLACEMENT\"");
}
```

:

"C%FOR%PLACEMENT"

Q29.SupposedistancebetweenGLAUniversityandDelhiism km(tobeenteredbyuser),byBUSyoucanreachDelhiin4hours .Developa‘C’programtocalculatespeedofbus.

:

```
#include<stdio.h>


intmain(){
```

```
    doubledistance;//Distanceinkilometers
    double time = 4.0; // Time in hours (known to be 4hours)

    //Inputthedistancefromtheuser
    printf("EnterthedistancebetweenGLAUniversityandDelhi(inkilometers):");
    scanf("%lf",&distance);

    //Calculatethespeed(speed=distance/time)doublespeed=distance/time;

    //Displaythespeedofthebus
    printf("Thespeedofthebusis%.2lfkm/h\n",speed);

    return 0;
}
```

Q30.In an exam Satyam got 50 marks, Suman got 70marks and Shyam got 80 marks, Write a 'C' programtofindaveragemarksofthesethreeparticipants.

:

```
#include<stdio.h>

intmain(){
    //MarksobtainedbySatyam,Suman,andShyam
```

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


//Calculatethetotalmarks
inttotalMarks=satyamMarks+sumanMarks+shyamMarks;


//Calculatetheaveragemarks
floataverageMarks=(float)totalMarks/3;//Usingfloatforaccuratedivision


//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.

:

```
#include<stdio.h>


intmain(){
```

```
    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.OnedaywhenIwasgoingforalunch,suddenlyrainstarted,Iwasveryhungrysostartedrunningwith speed of 4km/h and it took 3 min to reach mess.Helpmetodevelopa‘C’programtocalculatedistance travelled by me.

:

```
#include<stdio.h>


intmain(){
   doublespeed_kmph=4.0;//Speedinkilometersperhour
   doubletime_hr=3.0/60.0;//Timeinhours(3minutesconvertedtohours)


   //Calculatethedistancetraveled
   doubledistance_km=speed_kmph*time_hr;


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


   return 0;
}
```

Q33.Cantwoormoreescapesequencessuchas\nand \tbecombinedinasinglelineofprogramcode?

:

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

34. WhatarecommentsandhowdoyouinsertitinaCprogram?

:

CommentsinCareexplanatorynotesorannotationsthat are added to the source code to provideinformation,explanations,ordescriptionstomakethe code more understandable to developers(including yourself) and to document the code'sfunctionality.Commentsareignoredbythecompilerand donotaffecttheprogram'sexecution;theyexistsolelyforhumanreadability.

InC,therearetwotypesofcomments:

Single-linecomments:Thesecommentsareusedforaddingexplanationsornotesonasingleline.Theybeginwith//andcontinueuntiltheendoftheline.

//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 minorissue in its format specifier. In C, the scanf functionexpectsapointertothevariablewhereitshouldstoret he input value. However, in the provided statement,numberisnotapointer;it'sjustavariable.Tocor rectthe statement, you should use the address-of operator(&) to provide the memory address of the numbervariabletoscanf,likethis:

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.

:

```
#include<stdio.h>


intmain(){
   doublevolume=175.0;//Volumeofthetankingallons
   doublerate=25.0;//Drainrateingallonsperhour


   //Calculatethetimerequiredtodrainthetankcompletely
   doubletime_hours=volume/rate;
```

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

    return 0;
}
```

Q39.Thepercenty(indecimalform)ofbatterypowerremaining xhoursafteryouturnonalaptopcomputer is y = −0.2 x + 1. Develop a 'C' program tocalculateafterhowmanyhoursthebatterypowerisat75%?

:

```
#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.WhichofthefollowingisnotabasicdatatypeQ

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.Whichofthefollowingisanidentifier?

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

:

C. enum

Q47.Whatistheoutputofthefollowingprogram?#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.PerformthefollowingconversionfromDecimalto othernumber asdirected-

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()

{

float c =5.0;

printf("TemperatureinFahrenheitis%.2f",(9/5)*c+32);

return 0;

}

:

(9/5)*c+32