THE INDIAN COMMUNITY SCHOOL KUWAIT – KHAITAN

Dear Parent,

We are glad to inform you that K-RAYS, our exhibition of projects on Science, Mathematics, Social Science, English, Hindi, French, EVS, Computer Science, Art, Music, Dance, Arabic, Islamic Studies and Sports is going to be re-launched after a gap of two years. It is going to be organized on Thursday, 17th October, 2019 from 04:00 pm to 08:00 pm in our campus. All students from LKG to XI are expected to participate as it is going to be a rich learning experience for them. It will also provide an opportunity for innovative thinking. The participation is optional for class X and XII students.

A child may submit minimum 1 project and maximum of 2 individually or as a team. These projects shall be considered as their SEA (Subject Enrichment Activity) for that respective subject. Marks shall be awarded for the same. A child doing a project in a particular subject is exempted from the vacation assignment of that subject. Class wise/ subject wise topics are suggested along with the vacation assignments below.

All projects are to be submitted to the concerned subject teachers after the vacation. The best 10 projects from each class shall be selected, to be exhibited in K-RAYS. Class wise best 3 projects will be awarded prizes.

Please note:
- The student has to submit the vacation assignments on his/her first reporting day after the vacation. Any delay in this shall be penalized by deducting 1 mark per day.
- The project/ exhibit should be an original work done by an individual student or a team of maximum 4 students.
- As far as possible, innovative working models should be submitted, mere charts/still models will not be preferred.
- Commercially available models will not be allowed unless it is an integral part of the exhibit.
- Highly inflammable materials, any unsafe apparatus or device will not be allowed.
- First submission of the K-Rays projects is on 10th September, 2019.
- In case your ward's project is selected, you may make any modification, or prepare any supporting materials (charts, ppt. etc) if required, before the exhibition.

Thanking you.
With best regards,

Principal   26 /05/2019

THE INDIAN COMMUNITY SCHOOL, KUWAIT
ENGLISH HOLIDAY ASSIGNMENT 2019-CLASS XII SCIENCE

Q1. (a) Read at least three short reports in any English newspaper. Cut and paste them in your note-book. On the basis of your reading of these reports, make notes on them in points only, using headings and sub-headings and also suggest a suitable title. Use recognizable abbreviations wherever necessary. (Note Making)
(b) Make a summary of these passages in not more than 80 words.
Q2. You want to sell your car as you are going abroad. Draft a suitable advertisement to be published in a national daily.
Q3. Water is precious and each one of us must stop wastage. Design a poster in not more than 50 words urging people to employ various methods of rain water harvesting in their colonies.
Q4. You lost your bus pass in the school. Write a notice in not more than 50 words giving details of the pass and the probable time of the day you lost it.
Q5. You are Raman of Model Sr. Sec. School, Delhi. You visited International Book Fair organized from 14th Nov to 29th Nov 2017 at Pragati Maidan by Delhi administration. Write a brief report in 125-150 words giving all the details about its objective, types of books, publishers, arrangements etc., for your school magazine.
All work should be in manuscript (handwritten) and presented neatly in a folder.

HOLIDAY ASSIGNMENT CLASS XII PHYSICS

1. Calculate the voltage needed to balance an oil drop having 10 electrons when located between the plates of a capacitor which are 5 mm apart. Mass of drop is 3×10^{-16} kg.

2. How will you convert a galvanometer of resistance 12Ω showing full scale deflection for a current of 3mA to i) Ammeter of range 0 to 6 A ii) voltmeter of range 0 to 18 V

3. A short bar magnet of magnetic moment 5.25×10^{-2} JT^{-1} is placed with its axis perpendicular to the earth's field direction. At what distance from the centre of the magnet, the resultant field is inclined at 45^0 with the earth's field on its normal bisector. Earth's field at the place is 0.42 G.

4. There are two insulated charged copper spheres A and B of identical size. A third sphere of identical size but uncharged is brought in contact with A and then brought in contact with B, and finally removed from both. What is the new force of repulsion between A and B? Spheres are separated by a distance 50cm and initial charge of A and B are 6.5 $\times 10^{-7}$C each.

5   A horizontal wire 0.1m long and weighing 10^{-3} kg is to be supported against the force due to gravity. The current in the wire is 10A and goes from north to south. What should be the magnitude and direction of the magnetic field ?

6   Three hollow concentric spheres A, B, and C having radii a, b and c (a < b < c) have uniform surface charge densities + , - and + respectively. Compute the electric potential at the surface of each sphere.

Find the total energy stored in the capacitors in the given network.
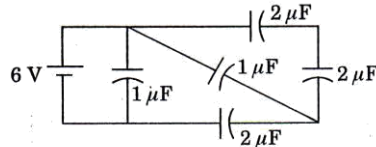
8.   The vertical component of earth's magnetic field at a place is √3 times the horizontal Component. Find the dip angle .

9.   A copper rod of length 'l' rotates about its end with angular velocity ' ' in a uniform magnetic field 'B'. Find the emf developed between the ends of the rod. The field is normal to the plane of rotation.

10   A wire 40 cm long bent into a rectangular loop 15cm x 5cm is placed perpendicular to the magnetic field whose flux density is 0.8 wb/m^2. In 0.5s the loop is changed into 10cm square and flux density increases to 1.4 wb/m^2. Find the induced emf.

11   The given figure shows a network of resistances .Name the circuit so formed.
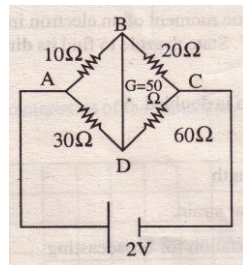
What is the current flowing in the arm BD of this circuit? State the two laws used to find the current in different branches of this circuit.

12   Four identical cells, each of emf 8V and internal resistance 2.5 are connected in series and charged by a 100V dc supply using a 24 resistor in series. Calculate the following:
(i) Charging current in the circuit (ii) Potential difference across the cells during re-charging (iii) Chemical energy stored in the cell in 10 minutes.

13   Two cells of emf E1 and E2 in the given diagram have emf of 5V and 9V and internal resistance of 0.3 and 1.2 respectively. Calculate the value of current flowing through the resistance of 3

14
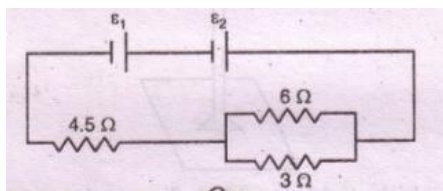
15   An alpha particle and a proton are accelerated from rest through the same momentum into a uniform magnetic field perpendicular to it. Find the ratio of their radii of curvature.

16   (a) State the principle of working of a potentiometer. (b) Figure shows the circuit diagram of a potentiometer for determining the emf E of a Cell of negligible internal resistance. (i)

What is the purpose of using high resistance R2? (ii) How does the position of balance point
(J) change when the resistance R1 is decreased? (iii) Why cannot the balance point be obtained (1) when the emf E is greater than 2V and (2) when key (K) is closed?
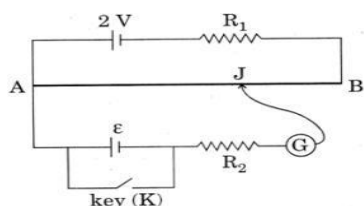
16   Write any two factors on which internal resistance of a cell depends. The reading on a high resistance voltmeter, when a cell is connected across it, is 2.2V. When the terminals of the cell are also connected to a resistance of 5Ω as shown in the circuit, the voltmeter reading drops to 1.8V. Find the internal resistance of the cell.
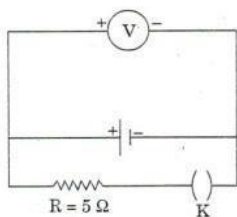
17   Four charges +q, +q, -q and -q are placed respectively at the corners A, B, C and D of a square of side 'a' arranged in the given order. Calculate the electric potential and intensity at O, the centre of the square.

18   Calculate the equivalent resistance of the given electrical network between the points A & B. Also find current through CD and AC if a 10V dc source is connected between A and B
and take the value of R as 2 Ω.   .

4
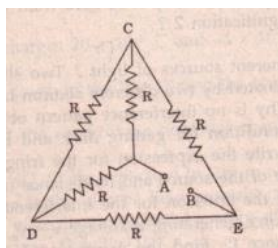
19 A circular coil of 20 turns and radius 10cm is placed in a uniform magnetic field of 0.1T normal to the plane of the coil. If the current in the coil is 5A, what is the
i) total torque on the coil ii) total force on the coil iii) average force on each electron in the coil due to the magnetic field (the coil is of copper of cross sectional area $10^{-5}m^2$ and the electron density in copper is 10^{29} m^{-3})

20 Two circular coils of radii r_1 and r_2 ($r_1 < r_2$) are placed coaxially with their centers coinciding. Obtain the mutual inductance of the arrangement.

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CLASS XII   **CHEMISTRY - HOLIDAY ASSIGNMENT (2019)**

1 Identify the order of reaction from the following unit for its rate constant: s^{-1}

2 What you mean by activity and selectivity of a catalyst.

3 What is an ambident nucleophile? Give an example.

4 a. Draw the structure of the following compound;

               1-Bromo-3-methylpent-2-ene

b. Give the IUPAC name of the following compound

               $(CH_3)_2C= CHCH_3CH(Cl)CH_3$

5 Write the chemical equations for all the steps involved in the rusting of iron.

6 a. The rate of a reaction, $2NO + Cl_2 \rightarrow 2NOCl$ is doubled when concentration of Cl_2 is doubled & it becomes 8 times when concentration of both NO & Cl_2 are doubled. Deduce the order of reaction.

b. Define order of a reaction

7 Define pseudo first order reaction and give two examples.

8 One half cell in voltaic cell is constructed from a silver wire dipped in $AgNO_3$ solution of unknown

concentration. The other half cell consist of a zinc electrode in a 0.10M solution of $Zn(NO_3)_2$. A voltage of 1.48V is measured for this cell. Use this information to calculate the concentration of silver nitrate solution.

(Given $E^0_{Zn^{2+}/Zn}$ = -0.76V, $E^0_{Ag^+/Ag}$ = +0.80V)

9   What is the difference between multi molecular and macromolecular colloids? Give one example of each type. How are associated colloids different from the above two types of colloids.

10   Describe how the following changes are brought about:
   a. Pig iron into steel
   b. Bauxite into pure alumina
   c. Impure copper into pure copper

11   Non ideal solutions exhibit either positive or negative deviations from Raoult's law. What are these deviations and how are they caused?

12   What mass of NaCl (molar mass = 58.5 g mol^{-1}) must be dissolved in 65 g of water to lower the freezing point by 0.750^{0}C? The freezing point depression constant Kf for water is 1.86K kg mol^{-1}. Assume Van't Hoff factor for NaCl is 1.87.

13   Define the terms osmosis and osmotic pressure. What is the advantage of using osmotic pressure as compared to other colligative properties for the determination of molar masses of solutes in solution?

14   A solution prepared from 1.25 g of oil of wintergreen (methyl salicylate) in 99.0 g of benzene has a boiling point of 80.31^{0}C. Determine the molar mass of this compound. (Boiling point of pure benzene = 80.10^{0}C and Kb for benzene = 2.53^{0}C kg mol^{-1}.)

15   The vapour pressure of pure benzene at a certain temperature is 0.850 bar. A non-volatile non electrolyte solid weighing 0.5g when added to 39g of benzene. Vapour pressure of solution, then is 0.845 bar. What is molecular mass of the solid substance?

16   18g of glucose, $C_6H_{12}O_6$, is dissolved in 1 kg of water in a sauce pan. At what temperature will the water boil at 1.013 bar? K_b = 0.52 K kg mol^{-1}.

17   Explain the mechanism of SN 1 and SN 2 with examples

   18. Write reactions for the following
       i. Finkelstein reaction
       ii. Wurtz reaction
       iii.Fittig reaction

iv. Wurtz Fittig reaction
v. Friedel Craft alkylation
19. Conversions:
   i. Propene to propanol   ii. 1-Bromopropane to 2- Bromopropane
   iii. 2-Bromopropane to 1-Bromopropane
20. What happens when :
   i. n-butyl chloride is treated with alcoholic KOH
   ii. Bromobenzene is treated with Mg in the presence of dry ether

Holiday Assignment . Biology Class XII 2019-2020

Both Haemophilia and Thalassemia are blood related disorders in humans. Write their causes and the difference between the two. Name the category of genetic disorder they both come under.

List the two methodologies which were involved in human genome project.
Mention how they were used. Expand 'YAC' and mention what it was us
for.

Describe the structure and function of a t-RNA molecule. Why is it referred to as an adapter molecule? Explain the process of splicing of hn-RNA in a eukaryotic cell.

Explain the following phases in the menstrual cycle of a human female:
   (i)   Menstrual phase
   (ii)   Follicular phase
   (iii) Luteal phase

 A proper understanding of menstrual cycle can help immensely in family planning. Do you agree with the statement? Provide reasons for your answer.

Write the different components of a lac-operon in E. coli. Explain its expression while in an 'open' state.

State two postulates of Oparin and Haldane with reference to origin of life .

State the fate of a pair of autosomes during gamete formation.

Differentiate between the genetic codes given below:
   (a) Unambiguous and Universal
   (b) Degenerate and Initiator

).A mature embryo-sac in a flowering plant may possess 7-cells, but 8-nuclei.

Explain with the help of a diagram only.

.Draw a labelled diagrammatic sectional view of a human seminiferous tubule.

.Name the vegetative propagules in (i)Water Hyacinth(ii) Pistia.(iii)Grass (iv) Aga

.Explain co -dominance with the help of one example.

.Mention the combination(s) of sex chromosomes in a male and female bird.

.Describe the embryonic development of a zygote up to its implantation in humans.

.Explain the cause of chromosomal disorders in humans. Describe the effect of such disorders with the help of an example each involving (i)autosomes, and (ii) sex chromosomes.

.(a)What are the benefits of choosing a dioecious plant species for plant breeding experiments?
 (b) How would you proceed to cross-pollinate a monoecious flower?

 (c) Draw a labelled schematic diagram of T.S. of an anther of an angiosperm.

.Explain the hormonal regulation of spermatogenesis in humans. Draw the diagram of a human sperm. Label and write the functions of the components of its head.

.Describe the hybrid cross carried on Drosophila melanogaster by Morgan and his group. How did they explain linkage, recombination and gene mapping on the basis of their observations?

.Describe the interaction of t-RNA, m-RNA and ribosomes during the events of translation.

PSYCHOLOGY HOLIDAY ASSIGNMENT CLASS XII
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1. Case study:
   Conduct a case study on any individual, group/organization, concept related to psychology using methods like observation, interview and survey. Case study should be minimum 20 pages (spiral bind)
2. Complete record work. All five practicals should be written neatly in the record.
3. Read all the concepts given in boxes in chapters 1-9, paraphrase them and write them in your own words in a separate notebook.
4. Make a presentation on main issues addressed in chapter 8 Psychology and Life.
5. Learn and revise chapters 1 to 5.

1. Design a GUI application in java to design the form for the company. You have to accept book code, Title, Author and Quantity sold and price from the user. Net price should be calculated using method on the basis of the discount given.   Bookseller - 25%   School - 20%   Customer - 5%

2. Design a GUI application in java to calculate employee salary .The application should accept Name, Address, Gender, Basic Salary, Medical , Conveyance , LIC and PF. Calculate and display Gross and Net pay using methods.
(Gross pay = basic + da + hra + Medical + Conveyance) and Netpay = Gross pay – (LIC + PF)

Basic	DA	HRA	LIC	PF
>=40000	35%	37%	8%	15%
>=20000	25%	32%	6%	12%
>=10000	25%	30%	5%	10%
Otherwise	15%	25%	5%	8%

3. Design the following application for theatre booking system.
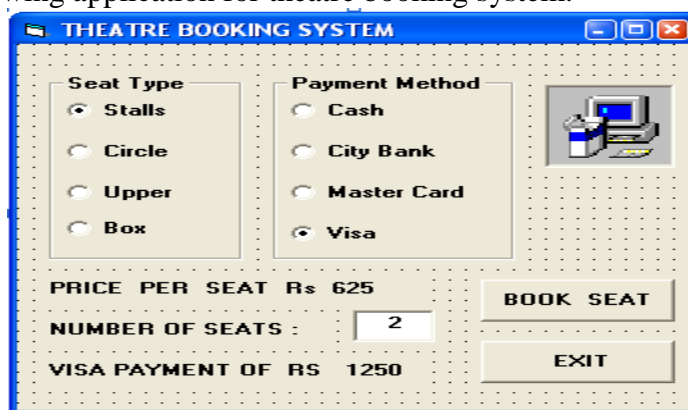
a) When user selects different seat type, then its price should be displayed in the seat type frame. Price for Stalls 625/- , Circle 750/-, Upper 850/- , Box 1000/-
b) Write a method called amount to calculate total amount to pay using different payment method. When the user clicks at the book seats button the total amount should be calculated along with the payment method.

4. Write a method to accept any three numbers and return the difference between maximum and minimum numbers.

5. Write a method to accept bp (basic pay), calculate da, pf, lic and return the gp. where gp = bp + da – pf – lic ;   da = 10% of bp ; pf = 12% of bp if bp < 3000 else 15% ; lic = 10% of bp

6. A company manufactures 3 products TV, VCR and DVD. It gives a discount of 12% on orders for TV if the order is for Rs 10,000 or more, a discount of 15% on orders for VCR if the order is for Rs 8000 or more , a discount of 10% on orders for DVD if the order is for Rs 2000 or more, return the final amount to pay.

Find the output for the following :	

7.   int s = 0;
        for (int j = 5 ; j < 10 ; j += 2)
        {   s -= 3 ;   j += 2 ;
          System.out.println (" : "+ s) ;
          s -= j ;   j += j++ / 5 ;
          System.out.println (" : " + j) ;
        }
	8. int s =2 , a = 2, i = 1;
	          while (++i <= 3)
	          { a += s-- ;
	              s += a++ ;
	              a -= s++ ; }
	          System.out.println(a+s);

Convert if <-> switch statement :	

9.   char code;
    if (code == 'A')
    System.out.print ("Accounts");
    else if (code == 'C' || code == 'G')
    System.out.print ("Grade IV");
    else if (code == 'F')
    System.out.print ("Advisor");
    else
    System.out.print ("Invalid");
	10. int w = 6 ;
	    switch (w--)
	    {
	    case 2 : System.out.print("low");
	    case 3 : System.out.print("mid");
	    break ;
	    case 4 : System.out.print("high");
	    default : System.out.print("No");
	    }

Convert   for <-> while statement :

11.   int m = 5, w = 10;
    for (int i = -2 ; i <= 10 ; i++)
    {
    if (++i <= 5)
      w += 2 ;
    else w -= 3 ;
    }
	12. float p = 4 , m = 2 , r = 1 ;
	    int i = 4 ;
	    while (i <= 7)
	    { if (i <= 5) m += p++ ;
	     else i++ ;
	    } ;

How many times the following message will be printed?

13.   for (int i = 2 ; i <= 20 ; i +=3)
    if (i < 10)
    System.out.println(" School");
    else break ;
	14. int p = 2 ,s=2 ;
	    while (p-s <= 2)
	    { s+=3; p+= 5 ;
	    System.out.println(" Hello"); }

Underline the Errors and Rewrite the corrected code :

15.   int m , y=3;
    Y=sqrt(45)+pow(2,3);
    if (m=y)
    jTextField.getText(" " + m);
    switch(m);
    case k: m++;
    else : p=*4;
	16. int k = 13 , b=-4 ,
	    float a= 12N ;
	    if (k > a or a < b)
	    a - b = k ; k-- ;
	    else
	    (k += a - k;
	    System.out.println(" "+ b + k);

17.   Declare a class bank with the following specifications:-
      Data members includes a/c No, name, address, balance; Member Functions
     includes:-
  a) input ( ) - a method to input the details of the account holders.
  b) output ( ) - a method to display the details of the data members.
  c) deposit ( ) - a method to credit the amount into the account.
  d) withdraw( ) - a method to debit from the account. (maintain minimum balance = 1000).
    Write a GUI program to perform the various operations:

Computer Science – XII - Holiday Assignment - 2019

1 a) Differentiate between overloaded functions and function with default arguments.   **2**
    Also give suitable example in C++.

  b) Name the header file required for successful compilation of the given snippet: **1**
    main( )
    {   char str[20]="Exam";
    cout<<setw(20)<<str;
    return 0; }

  c) Rewrite the given snippet after removing the syntactical error(s), if any.   **2**
    Underline each correction
      include<iostream.h>
       #define MAX 10

10

```
        void main()
            {    int AY[MAX]=(5,10,15,20,25);
                 const int loop 5;
                 for[int m=0; m<loop,m++]
                 switch(m):
                        {    case 0:
                             case 4: cout<<AY[m]*5
                             case 2:
                             case 1 cout>>AY[m]>>endl;
                        }
            }
```

d) What will be the output of the given snippet?   2
```
   #include <iostream.h>

   void RIDDLE(int *N,int c)

   { for(int i=1;i<c;i++)

       *(N+i-1)=*(N+i)+1;

   }

   void main()

   {    int p[] = {6,9,8},q[]={4,3,1},r[]={50,80};

        RIDDLE(p,3);    RIDDLE(q,3);    RIDDLE(r,2);

        for(inti=0;i<3;i++)

          cout<<p[i]<<'-';  cout<<endl;

         for(i=0;i<3;i++)

           cout<<q[i]<<'%'; cout<<endl;

         for(i=0;i<2;i++)

           cout<<r[i]<<'-'; cout<<endl;

   }
```

e) What will be the output of the following program: 3
```
  #include <iostream.h>
  void main()
  {
    char a[]="PrE BoArd ExAM-2009
    int i;
    for(i=0;i<strlen(a);i++)
        if(a[i]>=97 && a[i]<=122)
          a[i]--;
        else  if(a[i]>='0' && a[i]<='9')
```

1

```
                a[i]=a[i-1];
            else  if(a[i]>='A' && a[i]<='Z')
               a[i]+=32;
            else
               a[i]='#';
         puts(a);
      }
```

f) Study the following program and select the possible output from it :   2
```
    #include <iostream.h>
    #include <stdlib.h>
    void main()
    {
        int number;
        randomize();
        number = 65 + random(4)
        for (int I=number;I>=64;I--)
           cout<<I<<"#";  cout<<endl;

    }(i) 68#67#66#65#   (ii) 67#66#65#   (iii)65#66#67#68   (iv) None of the above
```

2.   a) Answer the questions (i) and (ii) after going through the following program: 2
```
     class Job
     {int jobid;char jobtype;
         public:
          ~Job(){ cout<<"Resigned"<<endl;                     //function 1
          Job(){ jobid=10;jobtype='T';}                       //function 2
          Void Tellme()                                       //function 3
          { cout<<jobid<<jobtype<<endl; }
          Job(Job &J)                                         //function 4
          { jobid=J.jobid +10; jobtype=J.jobtype+1; }
     };
```
(i)   Which member function out of Function 1, Function 2, Function 3 and Function 4
shown in the above definition of class Job is called automatically, when the scope
         of an object gets over? Is it known as constructor OR Destructor OR Overloaded
         Function OR Copy Constructor?
  (ii)   Job p;   //line-1
         Job q(p) //line-2.
         Which member function out of Function 1, Function 2, Function 3 and Function 4
         shown in the above definition of class Job will be called on execution of
         statement written as line 2? What is this function specifically known as out of
         destructor or copy constructor or default constructor?

     b) Define a class *Clothing* in C++ with the following descriptions: 4
        Private Members:
            Code   of type string
            Type   of type string
            Size   of type integer
            Material   of type string
            Price   of type float
```

2
```

- A function Calc () which calculates and assigns the value of Price as follows:
    For the value of Material as "COTTON":

        Type   *Price (Rs.)*
        TROUSER   1500
        SHIRT   1200

For Material other than "COTTON" the above mentioned Price gets Reduced by 25%.

Public Members:
  -A constructor to assign initial values of Code, Type and Material with the word "NOT ASSIGNED" and Size and Price with 0.
  -A function Enter( ) to input the values of the data members Code, Type, Size and Material and invoke the CalcPrice( ) function.
  -A function Show( ) which displays the content of all the data members for a Clothing.

c) Answer the questions (i) to (iv) based on the following code: 4

```
class Goods
{
    int id;
    protected :
    char name[20];
    long qty;
    void Incr(int n);
    public :
    Goods();
    ~Goods();
    void get();
};

class Food_products : protected Goods
{
    char exp_dt[10];
    protected :
    int id;
    int qty;
    public :
    void getd();
    void showd();
};
class Cosmetics : private Goods
{
    int qty;
    char exp_date[10];
    protected :
    int id;
    public :
    ~Cosmetics();
    Cosmetics();
    void show();
};
```

10.   Name the all protected members of class Food_products.
11.   Name the member functions accessible through the object of class Food_products.
12.   From the following, Identify the member function(s) that cannot be called directly from the object of class Cosmetics
        show()
        getd()
        get()
13.   If the class cosmetics inherit the properties of food_products class also, then name the type of inheritance.

3

3 a) Observe the program segment given below carefully and answer the
   following question 1 #include<fstream.h>

```
class school
{ private :
        char scode[10],sname[30];
        float nofstu;
        public:
             void INPUT( );
             void OUTPUT( );
             int COUNTREC( ); };
        int school::COUNTREC( )
             { fstream fin("scool.dat",ios::in|ios::binary);
             _____ //statement 1
             int B=_____
             //statement 2 int
             C=B/sizeof(school);
             fin.close( );
             return C; }
```

12   Write a function to display the word which contains maximum number of
characters. 2 in a text file "Info.txt"

   c) Given a binary file "BUS.DAT", containing records of the following class.   3

   class bus

   { int bus_no; char desc[40]; int distance;   //in km

    public:

      void bus::read()

      { cin>>bus_no; gets(desc) ;

      cin>>distance; } void bus::display()

      { cout<<bus_no; puts(desc);

      cout<<distance; } int bus::retdist()

      { return distance;   }

   };

   Write a function in C++ that would read contents of file "BUS.DAT" and
   display and transfer the details of those buses which travels distance
   more than 100 km to other file "Temp.DAT".