ENGLISH

1. Notebook completion (include all the chapters taught till 27.04.2019)
2. Read and come prepared-
    (a) 'Evans tried 'O' level"   (b) "The Enemy"
3. Revise- 'Letter to Editor', Advertisement and Invigilation/ Reply.

PHYSICS

1. Do all the derivation of chapter no. 1, 2 & 3 taught in the class.
2. Do all the examples & exercise question of chapter no. 1,2 & 3.
3. Two charges q and q separated by a small distance satisfy the equation $q_1 . q_2 < 0$. What does it tell us about (i) the charge and (ii) the Force.
4   What is the dimensional formula of ϵ_0., electric flux , Capacitance of a capacitor.
5   A point charge of 2.0 µC is at the centre of a cubic Gaussian surface   9.0 Cm on edge. What is the net electric flux through the surface?
6   Charges of magnitudes 2Q and -Q are located at points (a,0,0) and   (4a,0,0). Find the ratio of the electric flux due to these charges through concentric spheres of radii 2a and 8a centered at the origin.
7   Find an expression for electric field intensity due to a short electric dipole at any point situated along a line inclined at an angle Ꮎ from the dipole axis.
8   Using Gauss's Theorem derive an expression for the electric field due to a uniformly charged solid sphere (i) at a point inside the sphere (ii) on the surface of the sphere.
9   Two point charges of +16µC and -9µC are placed 8 C.m apart in air. Determine the position of the point at which the resultant electric field is zero
10. Show that the energy stored per unit volume in a parallel plate capacitor is directly proportional to the squqre of the applied electric field.
13. Two charges 5×10^{-8}C and -3×10^{-8}C are located 16 cm apart. At what point(s) on the line joining the two charges is the electric potential zero? Take the potential at infinity to be zero.
14. A charge Q is divided in two parts q and (Q – q) and these are kept at some distance 'r' apart. What is value of q for which the force between the two charges is maximum?
15 Write the principle of the Capacitor. What is polarization?
16. A uniformly charged conducting sphere of diameter 2.5m has a surface charge density $100µC/m^2$. Calculate (i) Charge on the sphere and (ii) Total electric flux passing through the sphere.

17. A 200μF capacitor is charged with 50V power supply and then it is connected with another 200μF uncharged capacitor. Find the amount of transfer of charge and the energy lost during the process.

18. Write the important results regarding electrostatics of conductors.

19. Draw the equipotential surface for (a) a point positive charge (b) an electric dipole (c) a system of two positive charge (d) for uniform electric field

20. What will be work done in moving a 2C charge on an equipotential surface of charge +Q . Give justification of your answer.

CHEMISTRY

1. A delta is formed at the meeting point of the sea water and river. Why?
2. What type of colloid is formed when a liquid is dispersed in solids? Give an example.
3. State Raoult's for the solution containing volatile components. What is the similarity between Raoult's law and Henery's law?
4. Calculate the mass of NaCl (molar mass = 58.5 g mol^{-1}) to be dissolved in 37.2 g of water to lower the freezing point by 2^0C, assuming that NaCl undergoes complete dissociation. (K_f for water = 1.86 K Kg mol^{-1})
5. A solution of glucose (Molar mass = 180 g mol^{-1}) in water has a boiling point of 100.20 ^0C. Calculate the freezing point of the same solution. Molal constants for water K_f and K_b are 1.86 K Kg mol^{-1} and 0.512 K Kg Mol^{-1} respectively.
6. Describe the role of
   (i) Iodine in the refining of zirconium.
   (ii) NaCN in the extraction of gold from gold ore
   (iii) Graphite rod in the metallurgy of aluminum.
   Write the chemical equations for the reactions involved.
7. (i) Which one of the following is an antibiotic:
   Morohine, Equanil, Chloramphenicol, Aspirin
   (ii) What problem arises in using alitame as artificial sweetner?
   (iii) Define antihistamines with an example.
8. Explain the following terms giving a suitable example for each:
   (i) Elastomer   (ii) Condensation polymer   (iii) Addition polymers
9. (i) Write the dispersed phase and dispersion medium of milk.
   (ii) What happens when a freshly precipitated $Fe(OH)_3$ is shaken with water containing a small quantity of $Fecl_3$.
   (iii)Why is finely divided substance more effective as adsorbent?
10. (a) Define the following terms:
    (i) Fuel cell   (ii) Limiting molar conductivity
    (b) Calculate $\triangle G^0$ and K_c for the following reaction at 298K:
    $2Cr^{3+}_{(s)} + 3Fe^{2+}_{(aq)} \longrightarrow 2Cr^{3+}_{(aq)} + 3Fe_{(s)}$ Given: $E^0_{cell} = 0.30V$
11. (a) Write the name of the cell which is generally used in hearing aids. Write the reaction taking place at the anode and the cathode of this cell.
    (b) The electrical resistance of a column of 0.05 M NaOH solution of diameter 1 cm and length 50 cm is 5.55 x 10^3 ohm. Calculate its resistivity, conductivity and molar conductivity.
12. Write the following name reactions from NCERT part II:
    Topic: Haloalkanes
    (i) Sandmayer's reaction   (ii) Finkelstein reaction
    (iii) Swarts reaction   (iv) Wurtz- Fittig reaction

Topic: Alcohols, Phenols
(i) Reimer- Tiemann reaction   (ii) Kolbe's reaction
Topic: Aldehydes ketones
(i) Etard reaction   (ii) Gatterman –Koch reaction
(iii) Clemmensen reduction   (iv) Wolff- Kishner reduction
Topic: Amines
(i) Gabriel phthalimaide synthesis   (ii) Hoffmann bromamide degradation reaction

BIOLOGY

Prepare the investigatory project on the topics discussed in the classroom or any other topic of your choice.

MATHEMATICS

Last 10 years CBSE asked questions on the following chapters to be done:
(a)   Matrices
(b)   Determinant
(c)   Inverse Trigonometric Functions
(d)   Vectors
(e)   3D
(f)   LPP

ACCOUNTANCY

1. A, B & C were partners in a firm having capitals of Rs.80,000; Rs.80,000; and Rs.40,000 respectively. Their Current Account balances were A Rs.10,000; B Rs.5,000 and C Rs.2,000 (Dr). According to the partnership deed, the partners were entitled to an interest on capital @5% pa. C, being the working partner was also entitled to a salary of Rs.6,000 p.a. The profits were to be divided as follows:
(a) The First Rs.20,000 in proportion to their capitals.
(b) Next Rs.30,000 in the ratio 5:3:2.
(c) Remaining profits to be shared equally.
The firm made a profit of Rs.1,56,000 before charging any of the above items. Prepare Profit and Loss Appropriation Account and pass the necessary Journal Entry for the apportionment of profit.

2. X, Y and Z are partners sharing profits and losses in the ratio of 5:3:2 respectively. Their capital on 1st April, 2015 showed credit balances of Rs.80,000, Rs.70,000 and Rs.50,000 respectively. They withdraw Rs.200 each on 1st day of every month. According to their partnership agreement, they are allowed interest on capital @ 5% and charged interest on drawings @ 6% p.a.. The profit for the year ended 31st March, 2016 as per Profit and Loss Account amounted to Rs.1,05,500 out of which Rs.20,000 were transferred to General Reserve Account for the first time. X, Yare entitled to a salary of Rs.2,500 and Rs.3,500 per year respectively and Z is entitled to a commission of 5% on net divisible profit after charging such commission. Prepare Profit and Loss Appropriation Account in the books of partners and show the working of how you calculated the commission for Z. Do not calculate any answer in the fraction of a rupee.

3. Simmi and Sonu are partners in a firm, sharing profits and losses in the ratio of 3:1. The Profit and Loss Account of the firm for the year ending March 31, 2016 shows a net profit of Rs.1,50,000. Prepare the Profit and Loss Appropriation Account by taking into consideration the following information:
    (a) Partners' capitals on April 1, 2015: Simmi Rs.30,000; Sonu Rs.60,000; (b) Current Account balances on April 1, 2015; Simmi Rs.30,000 (Cr.) ; Sonu Rs.15,000 (Cr.); (c) Partners' drawings during the year amounted to Simmi Rs.20,000; Sonu Rs.15,000; (d) Interest on capital was allowed @ 5% p.a.; (e)

Interest on drawings was to be charged @ 6% p.a. at an average of six months; (f) Partners' salaries: Simmi Rs.12,000 and Sonu Rs.9,000. Also show the partners' current accounts.

4. Singh and Gupta decided to start a partnership firm to manufacture low cost jute bags as plastic bags were creating many environmental problems. They contributed capitals of Rs.1,00,000 and Rs.50,000 on 1st April, 2012 for this. Singh expressed his willingness to admit Shakti as a partner without capital, who is specially abled but a very creative and intelligent friend of his. Gupta agreed to this. The terms of partnership were as follows:
    (1) Singh, Gupta and Shakti will share profits in the ratio of 2: 2: 1.
    (ii) Interest on capital will be provided @ 6% p.a.
    Due to shortage of capital, Singh contributed Rs.25,000 on 30th September, 2012 and Gupta contributed Rs.10,000 on 1st January, 2013 as additional capital. The profit of the firm for the year ended 31st March, 2013 was 1,68,900.
    (a) Identify any two values which the firm wants to communicate to the society.
    (b) Prepare Profit and Loss Appropriation Account for the year ending 31st March, 2013.

5. On 31st March, 2014, the balances in the capital accounts of Esha, Manav and Daman after making adjustments for profits and drawings were Rs.3,20,000, Rs.2,40,000 and Rs.1,60,000 respectively. Subsequently it was discovered that interest on capital and drawings had been omitted.
    (i)   The profit of the year ended 31st march, 2014 was Rs.90,000.
    (ii)   During the year, Esha and Manav each withdrew a sum of Rs.48,000 in equal instalments in the middle of every month and Daman withdrew Rs.60,000.
    (iii) The interest on drawings was to be charged @ 5% p.a. and interest on capital was to be allowed @ 10% p.a.
    (iv)   The profit sharing ratio among the partners was 3:2:1.
    Showing your workings clearly, pass the necessary rectifying entry.

6. A partner drew the following amounts on the dates mentioned. Calculate interest on drawings @ 5% p.a., when accounts are closed on 31st March, every year:

Date (2015-16)	1st April	1st Aug.	1st Oct.	1st Feb.	1st March.
Amount (Rs.)	500	1,000	1,000	500	1,000

7. Verma and Kaul are partners in a firm. The partnership agreement provides that interest on drawings should be charged @ 6% p.a. Verma withdraws Rs.2,000 p.m.starting from 1st April, 2015 to 31st March, Kaul withdraw Rs.3,000 per quarter, starting from 1st April, 2015. Calculate interest on partner's drawings.

8. Anju, Manju and Mamta are partners whose fixed capitals were Rs.10,000, Rs.8,000 Rs.6,000 respectively. As per the partnership agreement, there is a provision for allowing interest on capitals @ 5% p.a. but entries for the same have not been made for the last three years. The profit sharing ratio during these years remained as follows:

Year	Anju	Manju	Mamta.
2013-14	4	3	5
2014-15	3	2	1
2015-16	1	1	1

Make necessary adjustment entry in the beginning of the fourth year, i.e. 1st April, 2016.

9. A firm earns a profit of Rs.33,000. In such type of business a 15% return is reasonable return. The total assets of the firm are Rs.1,80,000, whereas liabilities are Rs.20,000. Find out the value of goodwill by capitalisation method using average profit and super profit.

10. L, M and N are partners. Their fixed capitals as on 31st March, 2014 were L Rs.50,000, M Rs.1,00,000 and N Rs.1,50,000. Profits for the year 2013-14 amounting to Rs.60,000 were distributed. Interest on capital was credited @ 10% p.a. instead of 12% p.a. pass the necessary adjusting entry.

11. At the time of admission of a new partner, the assets and liabilities were revalued. The following revaluations were made:
    (a) A provision for doubtful debts @10% was made on Sundry Debtors (Sundry Debtors Rs.50,000).
    (b) Creditors were written back Rs.5,000.
    (c) Building was appreciated by 20% (Book value of building Rs.2,00,000).
    (d) Unrecorded investments were worth Rs.15,000.
    (e) A reserve of Rs.2,000 was made for an outstanding bill for repairs. (Unrecorded liability towards

suppliers was 3,000.
Pass necessary Journal entries.

12. Ram and Shyam are partners sharing profits and losses in the ratio of 3: 1. On 31st March, 2011their Balance Sheet showed a workmen compensation reserve of Rs.80,000. On that date, they agree admit Mohan into the partnership firm. Mohan is given 1/4th share of future profits, which he quires in the ratio of 2: 1 from Ram and Shyam. Pass the necessary journal entry in the books of the firm under the following circumstances:
    (i)   When they want to transfer the workmen's compensation reserve in their capital accounts.
    (ii)   When they don't want to transfer workmen's compensation reserve in their capital accounts and prefer to record an adjustment entry for the same.

13. Hemant and Nishant were partners in a firm sharing profits in the ratio of 3:2. Their capitals were Rs.1,60,000 and Rs.1,00,000 respectively. They admitted Somesh on 1st April, 2013 as a new partner for 1/5th share in the future profits. Somesh brought Rs.1,20,000 as his capital. Calculate the value of goodwill of the firm and record necessary journal entries for the above transactions on Somesh's admission.

14. A and B were partners in a firm sharing profits in the ratio of 3: 2. On 1st January, 2011 they admitted C as a new partner. On the date of C's admission the balance sheet of A and B showed a general reserve of Rs.50,000 and a credit balance of Rs.30,000 in the 'profit and loss account'. Pass the necessary journal entries for the treatment of these items on C's admission.

15. A and B are partners in a firm sharing profits and losses in the ratio of 3:2. C is admitted for 1/5th share in profits of the firm. Calculate the new profit sharing ratio of the partners, if:
    (a) C gets it equally from A and B.
    (b) C gets it completely from A.
    (c) C gets it completely from B.
    (d) C gets it 3/20 from A and 1/20 from B.

16. Mahesh and Suresh are partners and they admit Naresh into partnership. They agreed to value goodwill at three years purchase on weighted average profit method taking profits for the last five years. They assigned weights from 1 to 5 beginning from the earliest year and onwards. The profits for the last five years were as follows:

Year ended	31st March 2013	31st March 2014	31st March 2015	31st March 2016	31st March 2017
Profit (Rs.)	1,25,000	1,40,000	1,20,000	55,000	2,57,000

Books of account revealed the following:
    (i)   A second hand machine was purchased for Rs.5,00,000 on 1st July, 2015 and Rs.1,00,000 were spent to make it operational. Rs.1,00,000 were wronglt debited to repairs account. Machinery is depreciated @ 20% p.a. on written down value method.
    (ii)   Closing stock as on 31st March, 2016 was undervalued by Rs.50,000.
    (iii) Remuneration to partner was to be considered as charge against profit and remuneration of Rs.30,000 p.a. for each partner was considered appropriate.
Calculate the value of goodwill.

17. Mohan and Sohan were in a partnership sharing profits and losses in the ratio of 3:2. In appreciation of the services of Rohan (manager) who was in receipt of a salary of Rs.4,80,000 per annum and a commision of 5% of the net profit after charging such salary and commission, they took him into partnership from 1st April, 2014 giving him 1/8th share of profits. The agreement provided that any excess over his former remuneration to which Rohan becomes entitled will be borne by Mohan and Sohan in the ratio of 2:3. The profits for the year ended 31st March, 2015 amounted to Rs.88,80,000. Prepare profit and loss appropriation account.

18. X and Y are partners sharing profits and losses in the ratio of 3:2. They employed Z as their manager to whom they paid a salary of 4,500 per month.
Z had deposited Rs.1,20,000 on which interest was payable @ 9% p.a. At the end of 2014-2015 after division of the years profit, it was decided that Z should be treated as partner with effect from 1st April, 2011-12 with 1/6th share of profits, his deposit being considered as capital carryong interest @ 6 % p.a. like capitals of other partners.
The firms profits and losses after allowing interest on capitals as a charge were – 2011-12 Rs.3,54,000; 2012-13 Rs.3,75,000; 2013-14 (loss) Rs.24,000; 2014-15 Rs.4,68,000. Record the necessary journal entries to give an effect to the above.

19. A,B and C entered into partnership on 1st April, 2015 to share profits in the ratio of 2:1:1. Partners having given a guarantee that C's share of profit will not be less than Rs.70,000 per annum. The loss for the year ended 31st March, 2016 was Rs.2,00,000 before allowing interest Rs.8,000 on A's loan which is due for the current year. Prepare profit and loss appropriation account for the year ended 31st March, 2016.

20. Suraj, Mahesh and Tarun are partners sharing profits and losses in the ratio of 4:3:2. They decide to share future profits and losses in the ratio of 2:3:4 with effect from 1st April, 2015.
An extract of their balance sheet as at 31st March, 2015 is as under.

Balance Sheet (an extract)
As at 31st March, 2015

Liabilities	Amount	Assets	Amount
Investment Fluctuation Reserve	36,000	Investments (at cost)	4,00,000

Show the accounting treatment under the following alternative cases:
   (i)   If there is no other information.
   (ii) If the market value of investments is Rs.4,00,000.
   (iii) If the market value of investments is Rs.3,82,000.
   (iv)   If the market value of investments is Rs.4,36,000.

BUSINESS STUDIES

1. Mr. Jain is working on the post of the production Manager of 'Jain Pharmaceutical Limited'. There are about eighty people working in his department. He pays a special attention to effecting coordination in all the activities going on in his department. This is the secret of the success of his department also. Mr. Arora meets his subordinates everyday and solves their problems there and then. He guides his subordinates at the right movement. The subordinates also submit their performance report to him timely. The subordinates have a full right to give suggestions or complaints. Mr. Arora rewards them also on the basis of their performance level. He has implemented a number of plans to motivate them. Often it is observed that subordinates do what their manager expects from them to do. All the decisions in the production department are taken only after consultation with the concerned employees. All the employees are very happy in the company.
   (a) Indentify the activity of management described in the paragraph given above.
   (b) Write about the different features of activity indentified in point (a).

2. XYZ power Ltd. Set up a factory for manufacturing solar lanterns in a remote village as there was no reliable supply of electricity in rural areas. The revenue earned by the company was sufficient day by day, so the company decided to increase production to generate higher sales. For this they decided to employ people from the nearby villages as very few job opportunities were available in that area. The company also decided to open schools and crèches for the children of its employees.
   (i)   Identify and explain the objectives of management discussed above.
   (ii) State any two values which the company wanted to communicate to the society.

3. Kayco Ltd. Is manufacturing detergents. They decide to launch a new range of herbal products. As they

are in a hurry, they have tested products on animals only. The necessary information is missing on the package. The management also plans to launch a new factory in a tribal area where the required products are easily available and the labour-men, women and children are available for work at low wages in the absence of development apportunities and schools.

    (a) Which values do you find disturbing in the above Para?

    (b) Will the decision to install a new unit in a tribal area help society? Highlight the social values involved in his decision.

4. Explain any five characteristics which reflect the nature of principles of management.

5. Explain by giving any five reasons, why principles of management are needed?

6. Explain the following principles of Fayol with the help of one example for each:

    (i) Scalar Chain.   (ii) Stability of tenure of personnel.

7. Explain the concept of 'Functional foremanship' and 'Mental revolution' in scientific management as enunciated by 'Taylor'.

8. Explain the technique of scientific management which is the strongest motivator for a worker to reach standard performance.

9. Explain the following principles of Fayol with the help of one example for each:

    (i) Division of work   (iii) Unity of direction.

    (ii) Discipline   (iv) Unity of command.

10. Nikita and salman completed their MBA and started working in a multi-national company at the same level. Both are working hard and are happy with their employer. Salman had the habit of backbiting and wrong reporting about his colleagues to impress his boss. All the employees in the organisation knew about it. At the time of performance appraisal, the performance of Nikita was judged better than Salman.

    Even then their boss, Mohammad Sharif decided to promote Salman stating that being a female; Nikita will not be able to handle the complications of a higher post.

    (i) Identify and explain the principle of management, which was not followed by this multi-national company.

    (ii) Identify the values, which are being ignored quoting the lines from the above Para.

11. Name and explain the technique of scientific management which helps in eliminating unnecessary diversity of products and thus results in saving cost.

12. Vijay Ltd. was manufacturing water-heaters. In the first year of its operations, the revenue earned by the company was just sufficient to meet its costs. To increase the revenue, the company analysed the reasons of less revenues. After analysis, the company decided:

    (i) To reduce the labour cost by shifting the manufacturing unit to a backward area where labour was available at a very low rate.

    (ii) To start manufacturing solar water-heaters and reduce the production of electric water-heaters slowly.

    This will not only help in converting the risks, but also help in meeting other objectives too.

    (a) Identify and explain the objective of management discussed above.

    (b) State any two values which the company wanted to communicate to the society.

13. 'Management is a profession like medical or legal profession'. Do you agree with this statement? Give any four reasons in support of your answer.

14. Manav, a post graduate in English, is successfully running his family business. All of a sudden, he thought of taking employment and got a job of finance manager in a company, on the basis of his

experience and efficiency.
    (i)   Do you think his appointment is valid?
    (ii)   Was it not necessary for him to be a part of professional association to attain the post?

15.   State three levels of management. Explain any three functions of the top level management.

16.   Raman is working as Plant superintendent in Tifco Ltd. Name the managerial level at which he is working. State any four functions he will perform as Plant Superintendent in this company.

17.   "Management is a series of continuous inter-related functions with no pre-determined sequence." Explain.

18.   State any five features of 'co-ordination'.

19.   Name and explain the principle of management according to which a manager should replace 'I' with we in all his conversation with the workers.

20.   Explain how principles of management:
    i)   Help in optimum utilization of resources and effective administration, and
    ii)   Help the managers in meeting changing environment requirements.

COMPUTER SCIENCE (083)
SECTION-A

1. (a) Find the correct identifiers out of the following, which can be used for naming variable, constants or functions in a C++ program :
     While, for, Float, new, 2ndName, A%B, Amount2, _Counter

 (b) Observe the following program very carefully and write the names of those header file(s), which are essentially needed to compile and execute the following program successfully :
```
typedef char TEXT[80];
void main()
{
TEXT Str[] = "Peace is supreme";
int Index=0;
while (Str[Index]!='\0')
if (isupper(Str[Index]))
Str[Index++]='#';
else
Str[Index++]='*';
puts(Str);
}
```

(c) Observe the following C++ code very carefully and rewrite it after removing any/all syntactical errors with each correction underlined.
Note : Assume all required header files are already being included in the program.
#Define float Max=70.0;

```cpp
Void main()
{
int Speed
char Stop='N';
cin>>Speed;
if Speed>Max
Stop='Y';
cout<<Stop<<end;
}
```

(d) Write the output of the following C++ program code :
Note : Assume all required header files are already being included in the program.

```cpp
void Position(int &C1,int C2=3)
{
C1+=2;
C2+=Y;
}
void main()
{
int P1=20, P2=4;
Position(P1);
cout<<P1<<","<<P2<<end1;
Position(P2,P1);
cout<<P1<<","<<P2<<end1;
}
```

(e) Write the output of the following C++ program code :
Note : Assume all required header files are already being included in the program.

```cpp
class Calc
{
char Grade;
int Bonus;
public:
Calc() {Grade='E';Bonus=0;}
void Down(int G)
{
Grade-=G;
}
Void Up(int G)
{
Grade+=G;
Bonus++;
}
void Show()
{
cout<<Grade<<"#"<<Bonus<<end1;
}
};
void main()
{
Calc c;
C.Down(2);
C.Show();
C.Up(7);
C.Show();
```

```
C.Down(2);
C.Show();
}
```

(f) Study the following program and select the possible output(s) from the options (i) to (iv) following it. Also, write the maximum and the minimum values that can be assigned to the variable NUM.
Note :
– Assume all required header files are already being included in the program.
– random(n) function generates an integer between 0 and n – 1.

```
void main()
{
randomize();
int NUM;
NUM=random(3)+2;
char TEXT[]="ABCDEFGHIJK";
for (int I=1;I<=NUM; I++)
{
for(int J=NUM; J<=7;J++)
cout<<TEXT[J];
cout<<end1;
}
}
```

(i)   FGHI   (ii)   BCDEFGH   (iii)   EFGH   (iv)   CDEFGH
       FGHI   BCDEFGH   EFGH   CDEFGH
       FGHI   EFGH
       FGHI   EFGH

2. (a) What is a copy constructor ? Give a suitable example in C++ to illustrate with its definition within a class and a declaration of an object with the help of it.

(b) Observe the following C++ code and answer the questions (i) and (ii) :

```
class Traveller
{
long PNR;
char TName[20];
public :
Traveller() //Function 1
{cout<<"Ready"<<end1;}
void Book(long P,char N[]) //Function 2
{PNR = P; strcpy(TName, N);}
void Print() //Function 3
{cout<<PNR << TName <<end1;}
~Traveller() //Function 4
{cout<<"Booking cancelled!"<<end1;}
};
```

(i) Fill in the blank statements in Line 1 and Line 2 to execute Function 2 and Function 3 respectively in the following code :

```
void main()
{
Traveller T;
_____ //Line 1
_____ //Line 2
```

}//Stops here
(ii) Which function will be executed at }//Stops here ? What is this function referred as?

(c) Write the definition of a class PIC in C++ with following description :
Private Members
- **Pno**   **//Data member for Picture Number (an integer)**
- **Category**   **//Data member for Picture Category (a string)**
- **Location**   **//Data member for Exhibition Location(a string)**
- **FixLocation()**   **//A member function to assign**
                                  //Exhibition Location as per category
                                  //as shown in the following table

Category	Location
Classic	Amina
Modern	Jim Plaq
Antique	Ustad Khan

Public Members
- **Enter()**   **//A function to allow user to enter values**
                                  //Pno, category and call FixLocation() function
- **SeeAll()**   **//A function to display all the data members**

(d) Write the definition of a function Alter(int A[], int N) in C++, which should change all the multiples of 5 in the array to 5 and rest of the elements as 0.
For example, if an array of 10 integers is as follows :

A[0]	A[1]	A[2]	A[3]	A[4]	A[5]	A[6]	A[7]	A[8]	A[9]
55	43	20	16	39	90	83	40	48	25

After executing the function, the array content should be changed as follows :

A[0]	A[1]	A[2]	A[3]	A[4]	A[5]	A[6]	A[7]	A[8]	A[9]
5	0	5	0	0	5	0	5	0	5

SECTION-B

1. (a) Write the type of C++ tokens (keywords and user defined identifiers) from the following :
(i) `else`
(ii) `Long`
(iii) `4Queue`
(iv) `_count`

(b) The following C++ code during compilation reports errors as follows :
Error: 'ofstream' not declared
Error: 'strupr' not declared
Error: 'strcat' not declared
Error: 'FIN' not declared
Write the names of the correct header files, which must be included to compile the code successfully:
```
void main()
{ ofstream FIN("WISH.TXT");
char TEXT2[]="good day";
char TEXT1[]="John!";
strupr(TEXT2);
strcat(TEXT1, TEXT2);
FIN<<TEXT1<<endl;
```

```
}
```

(c) Rewrite the following C++ code after removing any/all syntactical errors with each correction underlined.
Note : Assume all required header files are already included in the program.

```
Typedef Count int;
void main()
{ Count C;
cout<<"Enter the count:";
cin>>C;
for (K = 1; K<=C; K++)
cout<< C "*" K <<endl;
}
```

(d) Find and write the output of the following C++ program code :
Note : Assume all required header files are already included in the program.

```
void Revert(int &Num, int Last=2)
{
Last=(Last%2==0)?Last+1:Last-1;
for(int C=1; C<=Last; C++)
Num+=C;
}
void main()
{
int A=20,B=4;
Revert(A,B);
cout<<A<<"&"<<B<<endl;
B--;
Revert(A,B);
cout<<A<<"#"<<B<<endl;
Revert(B);
cout<<A<<"#"<<B<<endl;
}
```

(e) Find and write the output of the following C++ program code :
Note : Assume all required header files are already included in the program.

```
#define Modify(N) N*3+10
void main()
{
   int LIST[]={10,15,12,17};
   int *P=LIST, C;
   for(C=3; C>=0; C--)
   LIST[I]=Modify(LIST[I]);
   for (C=0; C<=3; C++)
   {
   cout<<*P<<":";
   P++;
   }
}
```

(f) Look at the following C++ code and find the possible output(s) from the options (i) to (iv) following it. Also, write the highest and lowest values that can be assigned in the array A.
Note :
□ Assume all the required header files are already being included in the code.

☐ The function random(n) generates an integer between 0 and n − 1.

```
void main()
{
randomize();
int A[4], C;
for(C=0; C<4; C++)
A[C]=random(C+1)+10;
for(C=3; C>=0; C--)
cout<<A[C]<<"@";
}
```

(i)	(ii)
13@10@11@10@	15$14$12$10$
(iii)	(iv)
12@11@13@10@	12@11@10@10@

2(a): Which function(s) out of the following can be considered as overloaded function(s) in the same program ? Also, write the reason for not considering the other(s) as overloaded function(s).

```
    void Execute(char A,int B); // Function 1
    void Execute(int A,char B); // Function 2
    void Execute(int P=10); // Function 3
    void Execute(); // Function 4
    int Execute(int A); // Function 5
    void Execute(int &K); // Function 6
```

(b) Observe the following C++ code and answer the questions (i) and (ii).
Note : Assume all necessary files are included.

```
class FIRST
{
int Num1;
public:
void Display() //Member Function 1
{
cout<<Num1<<endl;
}
};
class SECOND: public FIRST
{
int Num2;
public:
void Display() //Member Function 2
{
cout<<Num2<<endl;
}
};
void main()
{
SECOND S;
```

```
_____  //Statement 1
_____  //Statement 2
}
```
(i) Which Object Oriented Programming feature is illustrated by the definitions of classes FIRST and SECOND ?

(ii) Write Statement 1 and Statement 2 to execute Member Function 1 and Member Function 2 respectively using the object S.

(c) Write the definition of a class CONTAINER in C++ with the following description :

Private Members

```
- Radius, Height       // float
- Type                 // int (1 for Cone,2 for Cylinder)
- Volume               // float
- CalVolume()          // Member function to calculate volume as per
                          the //Type
```

Type	Formula to calculate Volume
1	3.14*Radius*Height
2	3.14*Radius*Height/3

(d) Write the definition of a function **SumEO(int VALUES[], int N)** in C++, which should display the sum of even values and sum of odd values of the array separately.

Example : If the array VALUES contains

25	20	22	21	53

Then, the function should display the output

Sum of even values = 42 (i.e., 20+22)

Sum of odd values = 99 (i.e., 25+21+53)

(e) Write a definition for a function **UpperHalf(int Mat[4][4])** in C++, which displays the elements in the same way as per the example shown below.

For example, if the content of the array Mat is as follows :

25	24	23	22
20	19	18	17
15	14	13	12
10	9	8	7

The function should display the content in the following format:

```
25   24   23   22
20   19   18
15   14
10
```

SECTION-C

1. (a) Write the type of C++ tokens (keywords and user defined identifiers) from the following :

    (i) case

    (ii) _delete

    (iii) WHILE

(iv) 21stName

(b) Jayneel has just started learning C++. He typed the following C++ code and during the compilation of the code, he got some errors. When Jayneel asked his teacher, the teacher told him to include necessary header files in the code.

Write the names of those header files, which Jayneel needs to include, for successful compilation and execution of the following code.

```cpp
void main()
{
cout <<"We win !"<<endl;
cout <<strlen("The World")<<endl ;
}
```

(c) Rewrite the following C++ code after removing any/all syntactical errors with each correction underlined.

Note : Assume all header files required in the code are already being included.

```cpp
#define 10*Number MAX(Number)
void main()
{
int Num,NewNum;
cout<<"Number:";
cin<<Num;
if Num<10
NewNum=MAX(Num);
else
NewNum=Num-2;
cout<<"New Number:"<<NewNum<<end;
}
```

(d) Find and write the output of the following C++ program code :

Note : Assume all required header files are already included in the program.

```cpp
void Decider(int &K,int L=70)
{
if (K>L)
K-=L;
else
K+=L;
}
void main()
{

int M=100,N=40;
Decider(M,N);
cout<<M<<"#"<<N<<endl;
Decider(M);
cout<<N<<"#"<<M<<endl;
}
```

(e) Find and write the output of the following C++ program code :

Note : Assume all required header files are already being included in the program.

```cpp
void DispScore(int S[],int N)
{
for(int Count = 0;Count<N;Count++)
cout<<S[Count]<<"#";
```

```
cout<<endl;
}
void main()
{
int *Point,Score[]={10,5,20,15};
Point=Score;
DispScore(Score,2);
for(int Count=0; Count<4; Count++)
{
cout<<*Point<<":";
if(Count%2==0)
Point++;
else
{
*Point +=10;
Point++;
}
}
cout<<endl;
DispScore(Score,4);
}
```

(f) Look at the following C++ code and find the possible output(s) from the options (i) to (iv) following it. Also, write the maximum values that can be assigned to each of the variables Low and High.
Note :

☐ Assume all the required header files are already being included in the code.

☐ The function random(n) generates an integer between 0 and n – 1.

```
void main()
{
randomize();
int Low=2+random(3),High=5+random(3);
int C[] = "ABCDEFGHIJ";
for(int I=Low;I<=High;I++)
cout<<C[I];
cout<<endl;
}
```
(i) **BCDE**   (ii)**CDEF**   (iii) **CDE**   (iv) **DCEFG**

2. (a) Differentiate between Data Hiding and Data Encapsulation in context of Object Oriented Programming. Also give a suitable example illustrating the same in C++.

(b) Observe the following C++ code and answer the questions (i) and (ii).
Note : Assume all necessary files are included.
```
class GAME
{
int Pcode,Round,Score;
public:
GAME() //Member Function 1
{
```

```cpp
Pcode=1;Round=0;Score=0;
}
GAME(GAME &G) //Member Function 2
{
Pcode=G.Pcode+1;
Round=G.Round+2;
Score=G.Score+10;
}
};
void main()
{
_____ //Statement 1
_____ //Statement 2
}
```

(i) Which Object Oriented Programming feature is illustrated by the Member Function 1 and Member Function 2 together in the class GAME ?

(ii) Write Statement 1 and Statement 2 to execute Member Function 1 and Member Function 2 respectively.

(c) Write the definition of a class FRAME in C++ with following description :

Private Members
- **FID**   // **data member of integer type**
- **Height**   // **data member of float type**
- **Width**   // **data member of float type**
- **Amount**   // **data member of float type**
- **GetAmount()**   // **Member function to calculate and assign**
                   // **Amount as 10∗Height∗Width**

Public Members
- **GetDetail()**   // **A function to allow user to enter values of FID, Height, Width.**
                    //**This Function should also call GetAmount() function to**
                    calculate Amount.
- **DispDetail()**   // **A function to display the values of all data members.**

3. (a) Write the definition of a function MIXER(int A[], int N) in C++, which should multiply 2 to the odd values present in the array and multiply 3 to the even values present in the array. The entire content of the array A having N elements should change without using any other array. **2**

Example : if the array Arr contains

23	20	5	11	10

Then the array should become

46	60	10	22	30

Note :

- The function should not display the content of the array.

(b) Write definition for a function TOPBOTTOM(int M[][5],int N,int M) in C++, which finds and displays sum of the values in topmost row and sum of the values in bottommost row of a matrix M (Assuming the parameter N represents number of Row and the parameter M represents number of Columns). **3**

For example, if the content of array M having N as 4 and M as 5 is as follows :

10	20	30	40	50
12	15	32	4	15
38	4	11	24	15
5	10	15	20	25

SECTION-D

1. (a) Write the type of C++ tokens (keywords and user-defined identifiers) from the following:
    (i) Struct   (ii) return   (iii) else   (iv) stack
  (b) The following C++ code during compilation reports errors as follows:
   Error: 'ofstream' not declared
   Error: 'strcpy' not declared
   Error: 'strcat' not declared
   Error: 'F' not declared
   Write the names of the correct header files, which must be included to compile the code successfully:
   void main()
   {
   ofstream F("WELCOME.TXT");
   char Word1[]="WELCOME";
   char Word2[]="C++";
   char Word[40];
   strcpy(Word, Word1);
   strcat(Word, Word2);
   F<<Word<<end1;
   }
(c) Rewrite the following C++ code after removing any/all syntactical errors with each correction underlined.

Note: Assume all required header files are already included in the program.
Typedef Number int;
void main()
{
Number N;
cout<<"Enter an integer";
cin>>N ;
for (I = 1; I<=N; I++)
cout<< N "*" I <<endl;
}
(d) Find and write the output of the following C++ program code :
Note: Assume all required header files are already included in the program.

```
void Turn(int &K, int Count=2)
{
Count=(Count%2==0) ?Count+I:Count-1;
for(int I=1; I<=Count; I++)
K+=I ;
}
void main()
{
int N=10,M=5;
Turn(N,M);
cout<<N<<"#"<<M<<endl;
M--;
Turn(N,M);
cout<<N<<"#"<<M<<endl;
Turn(N);
cout<<N<<"#"<<M<<end1;
}
```

(e) Find and write the output of the following C++ program code :
Note: Assume all required header files are already included in the program.

```
#define Change(X) X*2+100
void main()
{
int A[]={20,25,22,27};
int *Ptr=A, I;
for(I=3; I>=0; I--)
A[I]=Change(A[I]);
for (I=0; I<=3; I++)
{
cout<<*Ptr<<"*";
Ptr++;
}
}
```

(f) Look at the following C++ code and find the possible output(s) from the options (i) to (iv) following it. Also, write the highest and lowest values that can be assigned in the array T.
Note :
• Assume all the required header files are already being included in the code.

• The function random(n) generates an integer between 0 and n–1

```
void main()
{
randomize();
int T[4], I;
for(I=0; I<4; I++)
T[I]=random(I+I)+I;
for(I=3; I>=0; I--)
cout<<T[I]<<"$";
}
```

(i) 4$3$1$1$ (ii) 0$1$2$3$ (iii) 3$2$1$0$ (iv) 1$2$3$4$

2. (a) Which function(s) out of the following can be considered as overloaded function(s) in the same program? Also, write the reason for not considering the other(s) as overloaded function(s).

```
void Compute(int A,char B);     //Function 1
void Compute(char A,int B);     //Function 2
int Compute(int A);             //Function 3
void Compute();                 //Function 4
void Compute(int &K);           //Function 5
void Compute(int P);            //Function 6
```

(b) Observe the following C++ code and answer the questions (i) and (ii).
Note: Assume all necessary files are included.

```
class ONE
{
int Datal;
public:
void Show() //Member Function 1
{
cout<<Datal<<endl;
}
};
class TWO: public ONE
{
int Data2;
public:
void Show() //Member Function 2
{
cout<<Data2<<endl;
}
};
void main()
{
TWO T;
_____ //Statement 1
_____ //Statement 2
}
```

(i) Which Object Oriented Programming feature is illustrated by the definitions of classes ONE and TWO ?

(ii) Write Statements 1 and Statement 2 to execute Member Functions 1 and Member Function 2 respectively using the object T.

(c) Write the definition of a class FIGURE in C++ with following description:
Private Members
- Sides   // integer
- Shape   // char array of size 20
- AssignShape()   // Member function to assign value of
                     // Shape based upon Sides as follows:

Sides	Shape
<3	Open
==3	Triangle
==4	Quadrilateral
>5	Polygon

Public Members
- GetFigure()   //A function to allow user to enter value
                     // of Sides. Also, this function should
                     // call Assign () to assign value of Shape
- ShowFigure()   // A function to display Sides and Shape

3. (a) Write the definition of a function **Sum(int Arr[], int N)** in C++, which should display the sum of even locations and sum of odd locations separately. Example: if the array Arr contains   **2**

0	1	2	3	4
15	23	12	17	8

Then the functions should display the output as :

Sum of even locations = 35 (i.e. 15+12+8)

Sum of odd locations = 40 (i.e. 23+17)

(b) Write definition for a function **ShowHalf(int Mat[4][4])** in C++, which displays the elements on and below the diagonal AC for the matrix ABCD in their respective row and column positions.   **3**

For example, if the content of the array Mat is as follows:

A   B

11	21	13	24
12	31	14	52
23	34	25	16
43	15	26	37

D   C

The function should display the following :

11

12 31

23 34 25

43 15 26 37

<u>Physical Education:</u>

Prepare the notes of the following topics:

- Planning in Sports
- Children and Sports
- Women and Sports
- Physiology and Sports

***