ENGLISH

1. As the Secretary of the Science Club of your school, write a notice in about 50 words informing students of an inter class science quiz.

2. You are Abhinav/Alka. You have planned a 2-week course to be arranged to help the children of your housing society called "Renaissance Housing Society" at Mysore acquire Spoken English Skills. As the Secretary of the Society , prepare a notice for the Society's notice board stating the objective of the course ,giving necessary details of the course and requesting the children of the society to join the course.

3. Your school, Adarsh Vidyalaya, Solan, is organising a lecture by the famous writer Vikram Seth on the occasion of 'Literacy Week' being celebrated in your school. Write a notice informing students about the lecture. Invent necessary details.

4. Draft a suitable notice for your School Notice Board giving details of the inauguration of the Literary Association activities in your school. You are Deepak/Deepaika, Secretary, School Literary Association. Your School is called Modern Senior Secondary School, Belgaum.

II LETTER WRITING

1. You are Manas/ Manasi at the Press Apartments of Sunder Nagar, Bihar. The main road leading to this colony has three man holes causing frequent accidents at night. There are no street lights on the main road. Write a letter to the Editor of the Times of India drawing attention of the government to this problem of the residents.

2. Write a letter to the Editor of a national daily inviting the attention of the authorities towards the increasing Environmental pollution in your city.

3. You are Vishal / Veena, a student of class XII of 10, Green Park, New Delhi is interested in learning languages. You come across an advertisement in The Times of India issued by The Institute of Foreign languages, New Delhi about the certificate course in Japanese offered by them. You decide to write a letter to the Director of the Institute seeking more information about the course duration, working hours, fee structure, etc. Write the letter.

4. As Mr. R. Singh, Head of the Department of Chemistry, Cambridge High School, Pune, you had placed an order with Messrs. Scientific Equipments, Dadar, Mumbai for test tubes and jar for the lab. When the parcel was received you observed that markings on the test tubes were not clear and some of the jars were damaged. Write a letter of complaint seeking immediate replacement.

III ARTICLE WRITING

1. Write an article in about 200 words for your school magazine on 'Films and their influence on school-going children'. You are Manpreeth / Manjula, a student of class XII.

2. You are Rohit / Kamal. You attended a seminar on Yoga, a way of life. Write an article in about 150 – 200 words on the contribution of yoga in leading a healthy and peaceful life.

3. In today's world, letter-writing has lost its charm. People and the youth in particular rely more on mobiles and computers to communicate. Write an article on the present trend in about 150 to 200 words. You are Kiran / Karthik.

4. With rising number of people in almost all the big cities of the country, the rate of crime has also increased proportionately. The police needs to be trained in new methodology of combating the crime

besides changing the mindset. Write an article in 150 – 200 words on the role of police in maintaining law and order in the metropolitan cities. You are Ravi/ Ravina.

HINDI

| क्र.सं.	गृह कार्य-	उद्देश्य
.1	निबंध लिखिए 1. देश के उत्थान मर युवाओ का योगदान 2. नारी शिक्षा 3. भ्रष्टाचार का दानव 4. भारतीय किसान (जरुरत अनुसार चित्र भी चिपकाये तथा अख़बार की कतरन भी लगाये)	रचनात्मक दृष्टिकोण का विकास
.2	निम्न कवियों का सचित्र साहित्यिक परिचय दीजिए। 1. हरिवंश राय बच्चन 2. महादेवी वर्मा 3. आलोक धन्वा 4. जैनेन्द्र कुमार	साहित्यिक दृष्टिकोण
.3	कोई पांच 5 देशभक्तिपूर्ण कविताओ का संकलन कीजिए।	साहित्यिक दृष्टिकोण
.4	ग्रीष्मावकाश में आप किसी पर्वतीय क्षेत्र में भ्रमण के लिए गए है,वहां के बारे में एक फीचर लिखिए।	रचनात्मक दृष्टिकोण का विकास

PHYSICS

1. Define electric flux. Write its S. I. unit. A charge q is enclosed by a spherical of radius R. if the radius is to half, how would the electric flux through the surface change?

2. A spherical conducting shell of inner radius r_1 and outer radius r_2 has a charge 'Q'. A Charge 'q' is placed at the center of the shell. What is the surface charge density on the (i) inner surface, (ii) outer surface of the shell? Write the expression for the electric field rice at a point x > r_2 from the center of the shell.

3. Show that the electric at the surface of a charged conductor is given by E = σ/ε0n cap , where where σ is the surface charge density and n cap is a unit vector normal to the surface in the outward direction.

4. A thin straight infinitely long conducting wire having charge density λ is enclosed by a cylindrical surface of radius r and length l, its axis coinciding with the length of the wire. Find the expression for the electric flux through the surface of the cylinder.

5. An electric dipole is held in a uniform electric field.
(i) Show that the net force acting it is zero.
(ii) The dipole is aligned to the field. Find torque acting on the dipole

6. An infinite number of charges, each of coulomb, are placed along x-axis at x = 1m, 3m, 9m and so on. Calculate the electric field at the point x = 0 due to these charges if all the charges are of the same sign.

7. A sphere s_1 of radius $r_1$encloses a charge Q, if there is another concentric sphere s_2 of the radius r_2 $(r_2 > r_1)$and there are no additional charges between s_1 and s_2. Find the ratio of electric flux through s_1 and s_2.

8. Given a uniform electric field $\vec{E}$ = 5 x 10^3 $\hat{i}$ N/C, find the flux of this field through a square of 10 cm on a side whose plane is parallel to the y - z plane. What would be the flux through the same square if the plane makes a $30°$ angle with the x-axis?

9. Using Gauss's law obtain the expression for the electric field due to a uniformly charged thin spherical shell of radius R at a point outside the shell. Draw a graph showing the variation of electric field with r, for r > R and r < R.

10. Drive the expression for electric field at a point on the equatorial line of an electric dipole.

11. (a) Three point charges q, -4q and 2q are place at the vertices of an equilateral triangle ABC of side 'l' as shown in the figure. Obtain the expression for the magnitude of the resultant electric force acting on the charge q.
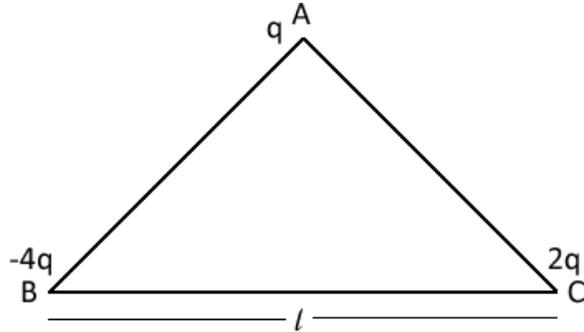
12. (a) Three point charges q, -4q and 2q are place at the vertices of an equilateral triangle ABC of side 'l' as shown in the figure. Obtain the expression for the magnitude of the resultant electric force acting on the charge q.
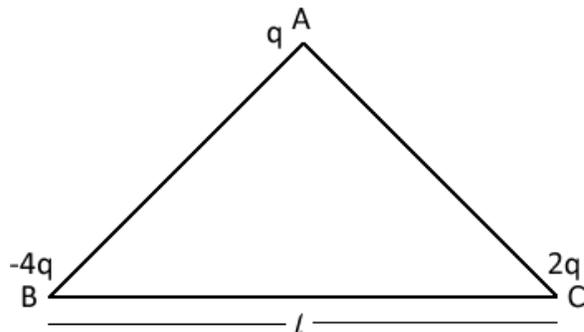
13. (a) Define electric flux. Write its SI units.
(b) The electric field components due to a charge inside the cube of side 0.1 m are as shown:
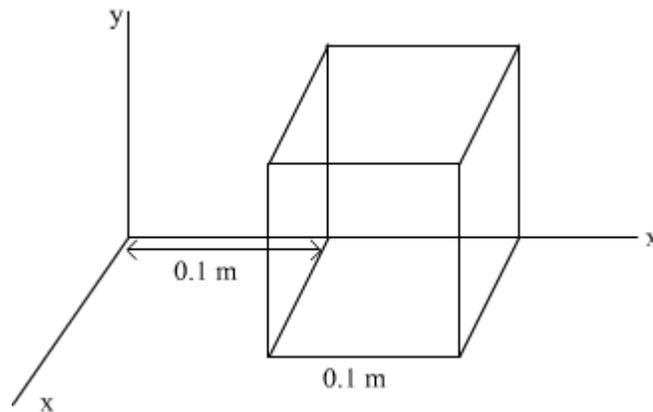

$= \alpha x, where \; \alpha = 500$N/C-m
$E_y = 0, E_z = 0$.
Calculate (i) the flux through the cube, and (ii) the charge inside the cube.

14. Define electric dipole moment. Is it a scalar or a vector? derive the expression for the electric field of a dipole at a point on the equatorial plane of the dipole.

15. Using Gauss' law deduce the expression for the electric field due to a uniformly charged spherical conducting shell of radius R at a point (i) outside and (ii) inside the shell

16. (a) Derive an expression for the electric field E due to a dipole of length "2a' at a point distant r from the center of the dipole on the axial line.

(b) Draw a graph of E versus r for r >> a.

(c) If this dipole were kept in a uniform external electric field E_0, diagrammatically represent the position of the dipole in stable and unstable equilibrium and write the expressions for the torque acting on the dipole in both the cases.

17. Use Gauss's theorem to find the electric field due to a uniformly charged infinitely large plane thin sheet with surface charge density σ.

18. Derivean expressionforthetorqueexperiencedbyanelectricdipolekept in a uniform electric field.

19. (a) Define electric flux. Write its S.I. units.

(b) Using Gauss's law, prove that the electric field at a point due to a uniformly charged infinite plane sheet is independent of the distance from it.

(c) How is the field directed if (i) The sheet is positively charged, (ii) negatively charged?

20. (a) Use Gauss' law to derive the expression for the electric field ($\vec{E}$) due to a straight uniformly charged infinite line of charge density λ C/m.
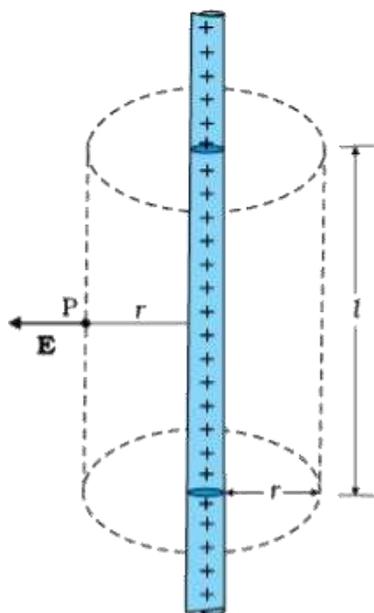
CHEMISTRY

Q1. Make PPT on any of the following topics:

a) Galvanic cells   b) Electrolytic cells
b) Colligative properties

Q2. Perform any one of the following projects:

a) Study of the presence of oxalate ions in guava fruit at different stages of ripening
b) Study of quantity of casein present in different samples of milk.

c) Preparation of soybean milk and its comparison with the   natural milk with respect to curd formation, effect of temperature, etc.

c) Study of the effect of Potassium Bisulphate as food preservative under various conditions (temperature, concentration, time, etc.)
d)   Study of digestion of starch by salivary amylase and effect of pH and temperature on it.
e) Comparative study of the rate of fermentation of following materials: wheat flour, gram flour, potato juice, carrot juice, etc.

    f) Extraction of essential oils present in Saunf (aniseed), Ajwain (carum), Illaichi (cardamom).
    g) Study of common food adulterants in fat, oil, butter, sugar, turmeric power, chilli powder and pepper.

Q3. Explain the following phenomena on the basis of Henry's law:

a) Painful condition known as bends

b) Feeling of weakness and discomfort in breathing at high altitude

Q4. Define semi permeable membrane.

Q5. Why is the vapour pressure of glucose solution lower than that of water?

Q6. How does sprinkling of salt helps in cleaning the snow covered roads in hilly areas? Explain.

Q7. Explain the solubility rule "like dissolves like" in terms of intermolecular forces that exist solutions.

Q8. Concentration terms like mass percentage, ppm, mole fraction, molality are independent of temperature, however molarity is a function of temperature. Explain.

Q9. When kept in water, raisins swell up. Name and explain the phenomena involved.

Q10. Discuss the biological and industrial importance of osmosis.

BIOLOGY

NOTE: Two students together can do one of the following projects

Q1. Make 3D model of DNA structure.

Q2. Study the various kinds of pollination in flowers.

Q3. Study about population genetics.

Q4. Make PPT on principles and processes of biotechnology.

Q5. List out the various products which are obtained through the biotechnological processes.

Q6. Study the human population in India.

Q7. Study the recent trend in cancer biology.

Q8. Study the life cycle of moth.

Q9. Study the water pollution and include one case study related to India.

Q10. Study the air pollution and include one case study related in India.

COMPUTER SCIENCE

1. (a) Differentiate between mutable and immutable objects in Python language with example.
   (b) Find the output of following:

```
L1 = [100, 900, 300, 400, 500]
Start = 1
Sum = 0
for C in range(Start,4):
        Sum = Sum + L1[C]
        print ( C , ":" , Sum)
```

```
                    Sum = Sum + L1[0] * 10
                    print (Sum)
```
2. (a) Find the output of following:
```
    L = [ ]
    L1 = [ ]
    L2 = [ ]
    for i in range (1, 10):
        L.append(i)
    for i in range (10, 1, -2):
        L1.append(i)
    for i in range (len(L1)):
        L2.append( L1[i] + L[i] )
    L2.append( len(L) – len(L1))
    print (L2)
```
 (b) What are functions? Explain about built-in functions with the help of example.
 (a) Write the output of following code when executed:
```
    Text = "yahoo#com"
    L = len (Text)
    Ntext = " "
    for i in range ( 0 , 1):
        if Text[i].isupper():
                Ntext = Ntext + Text[i].lower()
        elif Text[i].isalpha():
                Ntext = Ntext + Text[i].upper()
        else:
                Ntext = Ntext + 'bb'
        Print(Ntext)
```
     (b) What is a dictionary? Explain with example.
4. Write the output of the following :
    (a)   L1 = ['MY LAB', [1,2,3], 'Y', (3,4,6), 'TABLE', 50]
        (i) L1[2:3]
        (ii) L1[1:2]
        (iii) L1[3][1]
        (iv) L1[4:]
        (v) L1 [1][1]
    (b)   (i) str1 = "Working with…..Python!!!"
           print(str1.isalpha())
        (ii) str1 = "All Learn Python"
            Print(str1.istitle())
5. (a) Identify the keywords and valid identifiers from the following:
        (i) None   (ii) Final   (iii) 23Book   (iv) _number   (v) %age   (vi) elif
   (b) Write the Python code to create dictionary to include the list of following countries & their
capital.

India	New Delhi
Pakistan	Islamabad
Sri Lanka	Colomo
Bangladesh	Dhaka

6. Write a Python program to find maximum, minimum and mean value from the inputted list.
7. Differentiate between List and Tuple.
8. What are different types of operators used in Python.
9. Explain all built-in functions used in Python.
10. In a group of 2-3 students identify any real-world problem and collect raw data related to
that so that it can be used later-on for project work.

ECONOMICS
    1. Describe the great depression 1929

2. Describe the four major Sectors in an economy according to macroeconomic points of view
3. What are the four factor of production and what are the remunerations to each of these called?
4. What is difference between microeconomics and macroeconomic.
5. What to you mean by economic agent.
6. Describe basic national income aggregates
7. Describe critically GDP as measures of welfare.
8. How to injection and leakage in to economy affect its income and output
9. Why the national income is measured at factor price and not at markets price.
10. Define the following
    - Normal resident
    - Consumer goods and capital goods
    - Depreciation and capital loss
    - Investment

HISTORY
1. Watch The Mahabharat TV serial.
2. Read Jatak stories and stories from The Mahabharat.
3. Mauryan Administration
4. Read all the sources of Theme I and Prepare 5 questions from each passage. (Minimum 15 sources)

GEOGRAPHY

1. Completion of Homework of Chapters
    a. Human Geography : Nature & Scope
    b. The World Population : Distribution
    c. Density and Growth
    d. Population of Composition
    e. India-population growth and distribution
    f. Migration : Types, causes and consequences

2. Map Work File Preparation as Prescribed by C.B.S.E. syllabus

    Fundamentals of Human Geography (Textbook - I)
    Map items for identification only on outline political map of the world from the following units
        Unit – 2-I vol
        Unit – 3- I VOL

    India people and Economy (Textbook - II)
    For locating & labeling only on the outline political map of India
        Chapter 1 to 4 = 4 chapters
                            Unit -1 Practical