

TECNIA INTERNATIONAL SCHOOL
(AN ENGLISH MEDIUM SR. SEC. SCHOOL AFFILIATED TO CBSE)
F-19, SECTOR-8, ROHINI
NEW DELHI-85
2018 – 19
CLASS – X

ENGLISH

- Prepare a PPT on Health and Medicine.
- Write chapter-wise summary 1-10 of Helen Keller
- Write the character sketch of Anne Sullivan.

हिंदी

- ❖ संसार में ऐसे बहुत से उदाहरण हैं, जब शारीरिक रूप से सक्षम न होते हुए भी किसी व्यक्ति ने अपने क्षेत्र में बहुत बड़ी सफलता प्राप्त की। ऐसे किसी व्यक्तित्व के बारे में जानकारी एकत्रित करके प्रोजेक्ट बनाइए।
- ❖ महाकवि कालिदास का जीवन परिचय एवं रचना परिचय दीजिए।
- ❖ प्राकृतिक आपदाओं के बारे में जानकारी एकत्रित करके चित्र सहित प्रोजेक्ट तैयार कीजिए।
- ❖ जीवन दायिनी नदियों की स्वच्छता बनाए रखने हेतु सुझाव लिखिए।

MATHEMATICS

PROJECTS: 1) STATISTICS

Make an illustrative project file for the following:

- 1) i. Choose any 5 wards from South Delhi Municipal Corporation.
 - ii. Find the number/names of candidates who contested for the elections from these wards.
 - iii. Note their ages and prepare a frequency distribution table for the same taking 25 - 30 as one of the intervals.
 - iv. Find the mean, median and mode of the above data.
 - v. Construct histogram and frequency polygon for the same taking ages (in years) on x axis and number of candidates on y axis.
 - vi. Collect information about qualification of these candidates and prepare a 'pie chart' under the following categories: Illiterate, up to class 10th, up to class 12th, graduate, post graduate and professionals.

OR

2) VOLUMES AND SURFACE AREAS

Make an illustrative project file for the following:

Choose any 5 objects which are a combination of two or more 3D shapes (cuboid, cube, cylinder, cone, sphere and hemisphere).

ii. Measure their dimensions (round off to nearest natural number) and note them in your file

. iii. Calculate the curved/lateral and the total surface area of these solids.

iv. Also, find the volume of these solids.

v. Click pictures of the objects chosen and paste them along with the calculations. (You may also draw the pictures of the objects.)

2 Assignment :(To be done in the assignment register)

Topic: Real Numbers

Q1. Using Euclid's division algorithm, find the HCF of the following. (a) 1288, 576 (b) 155, 1305 (c) 240, 1024

Q2. If the HCF of 210 and 55 is expressible in the form $210 \times 5 + 55y$, find y .

Q3. Find the largest number which divides 245 and 1029 leaving remainder 5 in each case.

Q4. Using prime factorization, find the HCF and LCM of 72, 126 and 168. Also show that $\text{HCF} \times \text{LCM} \neq \text{product of the three numbers}$.

Q5. The HCF of two numbers is 145 and their LCM is 2175. If one number is 725, find the other.

Q6. The product of two numbers is 20736 and their HCF is 54, find their LCM.

Q7. After how many places of decimals, the decimal expansion of the rational number will terminate?

Q8. State the fundamental theorem of Arithmetic.

Q9. Check whether $5n$ can end with the digit 0 for any natural number n .

Q10. Express each of the following as the product of primes. (a) 6435 (b) 8085 (c) 2184

Q11. Show that square of an odd positive integer is of the form $8q + 1$, for some positive integer q .

Q12. Show that every positive even integer is of the form $2q$ and every positive odd integer is of the form

$2q+1$, where q is some integer.

Q13. Prove that $5 + 2\sqrt{3}$ is an irrational number.

Topic: Polynomials

Q1. If $(x + k)$ is a factor of $2x^2 + 2kx + 5x + 10$, find k .

Q2. If α and β are the zeroes of the polynomial $p(x) = 3x^2 - 5x + 6$, find (i) $(\alpha / \beta) + (\beta / \alpha)$ (ii) $\alpha^3 + \beta^3$ Q3. Find the quadratic polynomial whose zeroes are α and β .

Q4. Find a polynomial whose zeros are squares of the zeroes of the polynomial $3x^2 + 6x - 9$.

Q5. If '1' is one of the zeroes of the polynomial $p(x) = 7x - x^3 - 6$ find its other zeroes. 3

Q6. Find the quadratic polynomial, sum and product of whose zeroes are 2 and -1 respectively.

Q7. If the sum of the zeroes of the quadratic polynomial $kx^2 + 2x + 3k$ is equal to their product, find k . Q8. Find a polynomial whose zeroes are 2, 1 and -1 . What is its degree?

Q9. Find the polynomial whose zeroes are reciprocals of the zeroes of the polynomial $2x^2 + 3x - 6$.

Q10. Find the ratio of the sum and product of the zeroes of the polynomial $5x^2 + 2x - 10$.

Q11. If α , β and γ are the zeroes of the cubic polynomial $p(x) = 3x^3 - 6x^2 + 5x - 3$, then, find their sum and product.

Q12. Divide $3 - x + 2x^2 + x^3 - 3x^4$ by $(2 - x)$ and verify by division algorithm.

Q13. Find all the zeroes of the polynomial $p(x) = x^4 - 7x^3 + 9x^2 + 13x - 4$, if two of its zeroes are $2 + \sqrt{3}$ and $2 - \sqrt{3}$.

Q14. What must be subtracted from $8x^4 + 14x^3 - 2x^2 + 7x - 8$ so that the resulting polynomial is exactly divisible by $4x^2 + 3x - 2$.

Q15. Find all the zeroes of the polynomial $f(x) = 2x^4 - 3x^3 - 5x^2 + 9x - 3$, if two of its zeroes are $\pm \sqrt{3}$.

Topic: Pair of Linear Equations in Two Variables

Q1. Determine the value of k for which the given system of equations has unique solution: a) $2x - 3y = 1$; $kx + 5y = 7$ b) $4x - 5y = k$; $2x - 3y = 12$

Q2. Find the value of k , for which the system of equations has infinitely many solutions. a) $2x - 3y = 7$; $(k+2)x - (2k+1)y = 3(2k-1)$ b) $x + (k+1)y = 5$; $(k+1)x + 9y = 8k - 1$

Q3. Find the value of 'k' so that the following system of equations has no solution. a) $(3k+1)x + 3y - 2 = 0$; $(k^2+1)x + (k-2)y - 5 = 0$

Q4. Solve the following system of equations:

1) $x + 2y + 1 = 0$, $2x - 3y = 12$

2) $(2u+v) = 7uv$, $3(u+3v) = 11uv$

3) $2x+y - 3=0$, $2x - 3y -7= 0$

4) $x + y = a + b$, $ax - by = a^2 - b^2$

5) $(a + 2b)x + (2a - b)y = 2$, $(a - 2b)x + (2a + b)y = 3$

Q5. Solve the following system of equations graphically.

a) $x + y = 3$, $2x + 5y = 12$

b) $x - 2y - 5 = 0$, $3x - 6y = 15$

c) $2x - 3y +13=0$, $3x - 2y + 12 = 0$

d) $3x - 4y -1=0$, $2x - y + 5 = 0$

Q6. Represent the following equations on the graph and determine the vertices of the triangle, so formed.

a) $2y - x = 8$, $5y - x = 14$, $y - 2x = 1$

b) $y = x$, $y = 0$, $3x + 3y = 10$

Q7. Draw the graph of $x - y + 1 = 0$ and $3x + 2y -12 = 0$. Calculate the area of the triangle bounded by these lines and the x-axis.

Q8. Solve the system of equations $x - y = 1$, $2x + y = 8$ graphically. Shade the area bounded by these lines and x-axis. Also find its area.

Q9. A man has belts and handkerchiefs which are together 40 in number. If he had 5 more handkerchiefs and 5 less belts, the number of handkerchiefs becomes four times the number of belts. Find the original number of each.

Q10. The age of father is twice the sum of ages of his two children. Ten years hence, the age of father will be three-quarter of the sum of the ages of his children then. Find the present age of father.

Q11. The numerator of a fraction is 4 less than its denominator. If the numerator is decreased by 2 and the denominator is increased by 1, the denominator becomes 8 times its numerator. Find the fraction.

SOCIAL SCIENCE

I. Prepare a project on any one of the following topics:

1. Demonetization (Meaning, Background, Events and Impact)

2. Tsunami (Causes, Mitigation and Prevention)

3. Role of Society in Disaster

4. Guide of First Aid (Meaning of first aid, List of items included in the First Aid, Take three danger situation like bleeding, choking, burns, heat stroke, poisoning etc. and what will be your response towards it and how will you use first aid in that situation)

II. Following are the guidelines for the project:-

1. The total length of the project report should not be more than 10-15 A-4 size sheets.
2. The project report should be handwritten and credit will be awarded to original drawings, illustrations and creative use of materials.
3. The project report will be presented in a project file.
4. The project report should be framed in the following order:
 - Cover page showing project title, student information, school and year.
 - List of contents with page numbers.
 - Acknowledgements (acknowledging the institution, offices and libraries visited and persons who have helped).
 - Introduction
 - Background and Summary
 - Conclusions based on your findings.
 - Bibliography: Should have the name of the author and the book referred to, and in case of a website the name of the website must be mentioned.
 - All the photographs and sketches should be labeled.

III. Complete the given Question Bank in respective C.W Notebooks.

FOUNDATION OF INFORMATION TECHNOLOGY

Q1. Find relevant information on all of the following topics. Type the information in notepad and save it. There should be at least 5 notepad files having different information on the selected topic. This activity will help in making the Practical file of FIT. Bring the files in pen drive.

For example:-

If the topic is Environment (Save Energy) and Pollution (Global Warming), it should include the following information:

- a) Definition
- b) Causes
- c) Harmful effects
- d) What the government or concerned departments are doing to stop it.

e) How can the public contribute in controlling it.

Topics are:-

1. My Home Page
2. My School
3. My Family
4. Personal Blog with Name, Photo, Areas of Interest, School, State, Country
5. School Website - Infrastructure, Facilities, Uniform, Motto, School Pictures, Extra-Curricular Activities, Subject and Language Options
6. Travel and Tourism
7. Statistics on India - State wise Area, Population, Literacy (Enrolment in Primary, Middle, Secondary, Senior Secondary), Gender Ratio
8. Environment (Save Energy) and Pollution (Global Warming)

Q2. Find relevant information on all of the following topics. The information should be in a tabular form. Make it in MS Excel and bring the files in pen drive.

1. Personal Data Record File
2. School/Class Result Record
3. Employee Payroll
4. Stock Inventory
5. Vehicle Parking Record File

Q3. Find relevant information on any one of the following topics of your choice. Type the information in notepad and save it. There should be at least 5 notepad files having different information on the selected topic. The information should contain text data as well as some data in tabular form (in MS Excel). This activity will help in making the Project of FIT.

Bring the files in pen drive.

1. School Management
2. Public Services Computing
3. Business Computing

SCIENCE

1. Complete the practical files.
2. Do the given question bank of Ch-1 and Ch-2 in chemistry notebook.

QUESTION BANK OF CHEMISTRY

Chapter 1: Chemical Reactions and Equations

Q.1. What happens when (give equation also).

- (i) Potassium iodide solution is added to lead nitrate solution.
- (ii) Dilute hydrochloric acid is added to zinc granules.
- (iii) Water is added to quicklime.
- (iv) Carbon-di-oxide gas passed through limewater.

Q.2. (i) Give one chemical reaction characterised by the change in temperature.
(ii) Give one chemical reaction characterised by the formation of precipitate.

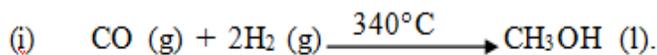
Q.3. Balance the following equations:

- (i) $\text{N}_2 + \text{H}_2 \longrightarrow \text{NH}_3$
- (ii) $\text{Al}(\text{OH})_3 + \text{H}_2\text{SO}_4 \longrightarrow \text{Al}_2(\text{SO}_4)_3 + \text{H}_2\text{O}$
- (iii) $\text{H}_2\text{O}_2 \longrightarrow \text{H}_2\text{O} + \text{O}_2$
- (iv) $\text{C}_6\text{H}_{12}\text{O}_6 + \text{O}_2 \longrightarrow \text{CO}_2 + \text{H}_2\text{O}$
- (v) $\text{Pb}(\text{NO}_3)_2 \longrightarrow \text{PbO} + \text{NO}_2 + \text{O}_2$

Q.4. Convert the following in the form of a balanced chemical equation.

“An aqueous solution of ferrous sulphate reacts with an aqueous of sodium hydroxide to form a precipitate of ferrous hydroxide and sodium sulphate remains in solution.”

Q.5. What information does the following chemical equation convey?



Chapter 2: Acids, Bases and Salts

- Q.1. What colours do the following indicators turn when added to an acid and base separately
- (i) Litmus (ii) Methyl orange (iii) Phenolphthalein
- Q.2. What happens when zinc metal reacts with sodium hydroxide?
- Q.3. What happens when carbon dioxide gas is passed through limewater?
- (i) For short time and
(ii) For a considerable time. Write equation of the reactions involved.
- Q.4. Give equations.
- (i) When an acid reacts with metal carbonate
(ii) When an acid reacts with metal hydrogencarbonate.
- Q.5. What happens when an acid reacts with a base? Give equation of the reaction involved what is the special name of this reaction?
- Q.6. What are olfactory indicators? Name two substances which can be used as olfactory indicators.
- Q.7. What is meant by strong acid and weak acids? Classify the following into strong acids and weak acids.
- HCl, CH₃COOH, H₂SO₄, HNO₃, H₂CO₃
- Q.8. Two solutions A and B have pH values of 3 and 9.5 respectively. Which of this will turn litmus from blue to red and which will turn phenolphthalein from colourless to pink?
- Q.9. Explain the pH change as the cause of tooth decay. How can tooth decay caused by pH change be prevented?
- Q.10. What happens during a bee sting? What is its remedy?
- Q.11. What happens when a concentrated solution of sodium chloride is electrolysed? Write the equation of the reaction involved.
- Q.12. A calcium compound which is yellow white powder is used as an disinfectant and also in textile industry. Identify the substance, give its chemical name and write the chemical reaction for its preparation.
- Q.13. What happens when a cold and concentrated solution of sodium chloride reacts with ammonia and carbon dioxide? Write the equation of the reaction, which takes place.
- Q.14. Describe how washing soda is produced starting from sodium chloride. Write equation of all reactions involved.
- Q.15. How is Plaster of Paris prepared? Write equation of the reaction involved.

QUESTION BANK OF BIOLOGY

- Do the given question bank in biology notebook.

- Q.1. Bile juice contains no digestive enzymes, yet it is very essential for digestion, why?
- Q.2. “Blood is commonly called river of the life.” Justify the statement.
- Q.3. What are dental caries? How they are formed?
- Q.4. Discuss the structure of stoma.
- Q.5. Excretion of uric acids in insects and birds is of great advantage. Why?
- Q.6. What is emulsification? What is its significance?
- Q.7. Haemodialysis is not a permanent solution of chronic renal failure. Why?
- Q.8. Name the organelles in a cell where photosynthesis and aerobic respiration takes place.
- Q.9. How respiration differs in plants and animals?
- Q.10. Explain experiments that prove that carbon dioxide and light are necessary for process of photosynthesis.
- Q.11. Why there is no backflow of blood from ventricles to auricles during ventricular systole?

Prepare a 3-D model on following:

Human Digestive System: Roll No. 1 to 6

Human Respiratory System: Roll No. 7 To 12

Human Heart: Roll No. 13 to 18

Human Excretory System: Roll No. 19 to 24

Human Brain: Roll No. 25 onward

Drawing

Prepare a design pattern on A3 size sheet with the help of colourful pastel sheets.