ARMY PUBLIC SCHOOL RATNUCHAK
SESSION 2016-2017
FA-2 (INTEGRATED ACTIVITIES)
CLASS-X
THEME:-SOURCES OF ENERGY

ENGLISH	**Project**:-(10 marks) In present times we need alternate sources of energy to fulfill our daily requirements .Design colorful pamphlets, with slogans on alternative sources of renewable energy which can be used by the future generations to run appliances in your home and school.(Half Chart paper with 4 faces) **Written Assignment:-** (10 marks) As we know that today the energy resources are being exploited at a rapid pace, it has been predicted that there will be no fuel left for our coming generations. If we don't find a way to save these resources. Write an article on "Sustainable development " making wise use of fuels for development.
HINDI	lkfj; kstuk dk; l ¼&¼10 vad ½ mtkl ds l a k/kuka dh l fp= tkudkjh ,df=r dj muij la{ksi ea ys[k fyf[k, ¼dkbl ikp½A dk; l l kQ gLrys[k ea dhft, ¼dkbl ikp½ xgdk; ¼&¼10 vad ½ ^ty gh thou gS vkS ^ty dks fdl idkj cpk;k tk l drk gS * **विषय पर संवाद, अनुच्छेद, विज्ञापन एवं सूचना तैयार कीजिए।** dk; l l kQ gLrys[k ea dhft, ¼l fp=½
MATHS	**Project**:-(10 marks) Find solar ,tidal and thermal energy annual consumption for three different years and find the mean for the three years separately for each category. **Written Assignment:-** (10 marks) The worksheet for the written assignment will be noted down from the board in the classroom or can be downloaded from school's website www.apsratnuchak.com
SCIENCE	**Project**:-(10 marks) Prepare a report as to how we can harness the following sources of energy. 1. Thermal energy 2. Wind energy 3. Solar energy 4. Energy from sea **Written Assignment:-** (10 marks) The worksheet for the written assignment will be noted down from the board in the classroom or can be downloaded from school's website www.apsratnuchak.com
S.Sc	**Project**:-(10 marks) Natural gas is very efficient fuel to generate electricity to power industry, to warm homes and even to fuel cars. Make a report on Natural gas as a source of energy, Types of natural gas, Extraction of natural gas, Use of Natural gas in different activities and its Environment benefits. **Written Assignment:-** (10 marks) The worksheet for the written assignment will be noted down from the board in the classroom or can be downloaded from school's website www.apsratnuchak.com

NOTE:-a) The integrated project for all the subjects should be done in separate files subjectwise.

b) Worksheets/Written assignment to be done in Rs 5 notebook subjectwise.

c) Worksheets/Written assignment can also be downloaded from school's website www.apsratnuchak.com

PRINCIPAL

CLASS: X   **SUBJECT: MATHEMATICS**

Q.1   If α and β are the zeroes of the quadratic polynomial $f(x) = 4x^2 + x - 2$, find the value of $\frac{\alpha}{\beta} + \frac{\beta}{\alpha}$

Q.2   If α and β are the zeroes of quadratic polynomial $p(x) = x^2 - x - 4$, find the value of $\alpha^2\beta + \alpha\beta^2$

Q.3   If α and β are the zeroes of the quadratic polynomial $f(t) = 3t^2 - 6t + 4$, find the value of $\frac{1}{\alpha} + \frac{1}{\beta}$.

Q.4   If the sum of zeroes of the polynomial $x^2 + (2k + 3)x + (3k + 4)$ is -3. Find k and the product of zeroes.

Q.5   Solve the following system of linear equations by cross-multiplication method :
$x + y = a - b$
$ax - by = a^2 + b^2$

Q.6   Using the cross-multiplication rule, solve the following system of equations.
$\frac{x}{a} + \frac{y}{b} = 2$
$ax - by = a^2 - b^2$

Q.7   Using cross-multiplication, solve the following system of equations:
$px + qy = p - q$
$qx - py = p + q$

Q.8   If sum of the zeroes of $f(x) = px^2 + 5x + 8p$ is equal to the product of the zeroes then find the value of p.

Q.9   Form a quadratic polynomial whose zeroes are $\frac{3 - \sqrt{3}}{5}$ and $\frac{3 + \sqrt{3}}{5}$.

Q.10   Divide p(x) by g(x) and find the quotient and remainder when
$p(x) = x^5 + x^4 + x^3 + x^2 + 2x + 2$ and $g(x) = x^3 + 1$ and verify the division algorithm.

Q.11   If two zeroes of the polynomial $x^4 + 3x^3 - 20x^2 - 6x + 36$ are $\sqrt{2}$ and $-\sqrt{2}$, find the other zeroes of the polynomial.

Q.12   Solve the following system of equations graphically
$x + 3y = 6$; $2x - 3y = 12$ and hence find the area of the triangle which these lines make with y axis.

Q.13 Solve for x and y:

$$\frac{5}{x+1} - \frac{2}{y-1} = \frac{1}{2}$$

$$\frac{10}{x+1} + \frac{2}{y-1} = \frac{5}{2}$$

$x \neq -1, y \neq 1$

Q.14 In $\triangle ABC$, $\angle A = x$, $\angle B = 3x$ and $\angle C = y$. If $3y - 5x = 30$ prove that the triangle is right angled.

Q.15 Check whether $7+3x$ is a factor of $3x^3+7x$.

Q.16 Solve for x and y using the cross multiplication method:

$$a(x+y) + b(x-y) = a^2 - ab + b^2$$

$$a(x+y) - b(x-y) = a^2 + ab + b^2$$

Q.17 If the polynomial $x^4 - 6x^3 + 16x^2 - 25x + 10$ is divided by another polynomial x2-2x+k, the remainder comes out to be x+a find k and a.

Q.18 A and B are friends and A is older to B by 2 years, A's father D is twice as old as A. B is twice as old as his sister C. If the ages of D and C differ by 40 years, find the age of A.

Q.19 Points A and B are 70 km apart on a highway. A car starts from A and another car starts from B simultaneously. If they travel in the same direction, they meet in 7 hours but if they travel towards each other, they meet in one hour. Find the speed of the two cars.

Q.20 A plane left 30 minutes late than the scheduled time and in order to reach the destination 1500 km away in time, it has to increase the speed by 250 km/hr from the usual speed. Find the usual time

CLASS: X   **SUBJECT: SCIENCE**

Q1 What is a balanced chemical equation? Why should a chemical equation be balanced?

Q2 Suggest Three methods to check a chemical reaction has taken place?

Q3 Why potato chips manufacturer fill the packet of chips with Nitrogen?

Q4 What happens chemically when quicklime is added to water? Give the related chemical equation.

Q5 Explain the following terms with one example in each case.

1. Corrosion   2. Rancidity

Q6 Draw a labeled diagram of the set of apparatus used for electrolytic decomposition of water?

Q7 Write one balanced chemical equation representing each of the following:

1. Endothermic reaction   2.Combination reaction   3. Photochemical reaction

Q8 Draw the diagram of human heart and label its four chambers. Construct a table to show the functions of these four chambers?

Q9 Draw a well labeled diagram of human digestive system. Describe the role of hydrochloric acid in our stomach?

Q10 Name two methods used by plants to get rid of excretory products?

Q11 How is small intenstine designed to absorb digested food?

Q12 How is Oxygen transported in human beings?

Q13 Describe with the help of a diagram the structure and function of an NEPHRON?

Q14 Describe double circulation of blood in human beings?

Q15 Draw a well labeled diagram showing the human respiratory system? Why do the walls of Trachea not collapse when there is less air in it?

Q16 What is meant by saying that potential differnce between two points is one Volt?

Q17 How much Energy is given to each coulomb of charge passing through a 9V battery?

Q18 Why are coils of electric toasters and irons made of an alloy rather than a pure metal?

Q19 What are the advantages of connecting devices in parallel with the bateery instead of connecting them in series?

Q20 How can three Resistors of resistance 2 ohm, 3 ohm and 6 ohm be connected to give a total resistance of :

1.   4 ohm   2.   1 ohm

ARMY PUBLIC SCHOOL RATNUCHAK
SESSION: 2016-17
WRITTEN ASSIGNMENT

CLASS: X   **SUBJECT: SOCIAL SCIENCE**

Q1. What is a novel?

Q2. How did novels become popular in eighteenth century Europe?

Q3. What is an epistolary novel? Give example.

Q4. How come serialised novel was able to create suspense? Give an example

Q5. Mention two reasons which led to the expansion in sales of novels.

Q6. 'Charles Dickens wrote about the terrible effects of industrialization on people's lives and characters'. Illustrate with example.

Q7. 'The novels of Jane Austan give us a glimpse of the world of women in genteel rural society.' Frame the image of the women of the time in your words.

Q8. Who is referred as the pioneer of hindi literature? What did he encourage?

Q9. Novelists in colonial India wrote for a cause. Explain with reference to novels of that time.

Q10. Describe the ways in which the novels in India attempted to create a sense of pan Indian belonging..

Q11. Explain the relationship between bio diversity and human beings.

Q12. Human beings are responsible for depletion of flora and fauna. Explain.

Q13. Describe the role of communities in conserving and protecting forests and wildlife in India.

Q14. Write a note on how we can conserve our forest and wildlife.

Q15. What are the different categories of existing plants and animal species, based on the international union for conservation of nature and natural resources (IUCN).

Q16. Write in detail about project Tiger.

Q17. What are the different types of forests? Explain.