SAINIK SCHOOL REWARI
HOLIDAY HOMEWORK (2019-20)
CLASS – X

Instructions to be followed for cadets:

1. Do all the Vacation Work in one Notebook only.

2. Do the work in notebook in a sequence as mentioned below:-
    (i) English, Hindi, Maths, Science, Social Studies for classes VI –X
    (ii) English, Maths, Physics, Chemistry Bio/Computer for classes XI-XII

3. Vacation Work should be done neatly and efficiently. It will be duly marked as a part of your assessment.

4. Any additional chart paper/Map /Model if any required in vacation work, should be submitted separately along with vacation work note book.

5. Do not get up late. Rise at the usual time and go for a morning walk, or play a game that interests you. Talk about things you see around. Plan some outdoor and indoor games. Spend some time on a hobby.

6. Read newspaper. Keep yourself updated. Reading from colourful illustrated story books will develop your language skills. Listen to stories from family members and try to narrate the stories you have read from various story books.

7. Assign a permanent workplace and a work-time. This brings in discipline in your life. If there is a subject you are weak in, try and work on improving that weakness. You will be more confident when you go back to school.

8. Inculcate good manners – 4 magic words `Please, Thank you, Excuse me, Sorry' – Use them and see the difference.

9. Do not spend time playing video games or using the smart phone, they tend to numb your senses and are a pure mechanical activity on hot summer afternoon, try playing scrabble or chess. Your vocabulary as well as concentration power will improve.

PHYSICS

1.   NCERT examples and questions of Chapter 1 (Electricity).

2.   Paste a photocopy of electricity and calculate the energy consumption shown in it?

3.   Segregate the appliances used in your house under the heading of 15 A and 5 A current rating and write in a tabular form.

4.   Practice all the questions:

(a)   How is an ammeter and a voltmeter connected in a circuit to measure current flowing through it? Also write one characteristic of each.

(b)   What happens to the a) resistance and b) resistivity of a conductor if its
a.   (i) area of cross section is doubled.   (ii) length is reduced to half.

(c)   Electric current is flowing through a metallic conductor from its one end A to the other end B. Which end of the conductor is at high potential? Why?

(d)   How much current will an electric bulb draw from 220V source if the resistance of the bulb is 1200Ω? If in place of bulb, a heater of resistance 100Ω is connected to the sources, calculate the current drawn by it?

(e)   Draw a schematic diagram of an electric circuit comprising of 3 cells and an electric bulb, ammeter, plug-key in ON mode and another with the same components but with two bulbs in parallel and a voltmeter across the combination.

(f)   Out of two wires X and Y shown below, which one has greater resistance if their material is same? Justify your answer.


        Wire X   ⊏━━━━━━━━━━━━━⊐

        Wire Y ⊏━━━━━━━━━━━━━━━━⊐

(g)   The charge possessed by an electron is 1.6×10^{-19} coulombs. Find the number of electrons that will flow per second to constitute a current of 1 ampere.

(h)   Define: (a) Electric current   (b) potential difference   (c) 1 ampere   (d) 1 volt

(i)   State the law which defines the resistance of a conductor. In an experiment to study the relation between the potential difference across a resistor and   the current through it, a student recorded the following observations:

Potential difference V(volts)	1.0	2.2	3.0	4.0	6.4
Current I (A)	0.1	0.2	0.6	0.4	0.6

On examine the above observations, the teacher asked the student to reject one set of readings as the values were out of agreement with the test. Which one of the above observation can be rejected? Calculate the mean value of resistance of the resistor based on the remaining four sets of readings.

(j) (a) Which conductor –A or B has more resistance and why?
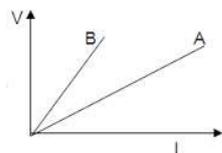
(b). A steel wire of diameter 0.1mm is shaped into a large circular ring of radius 20cm. The terminals of a cell of emf 12V and internal resistance 0.5Ω, are connected to opposite points on the circumference of the ring. Calculate the current that flows in the circuit. (The resistivity of steel is 2×10^{-7} Ω m.)
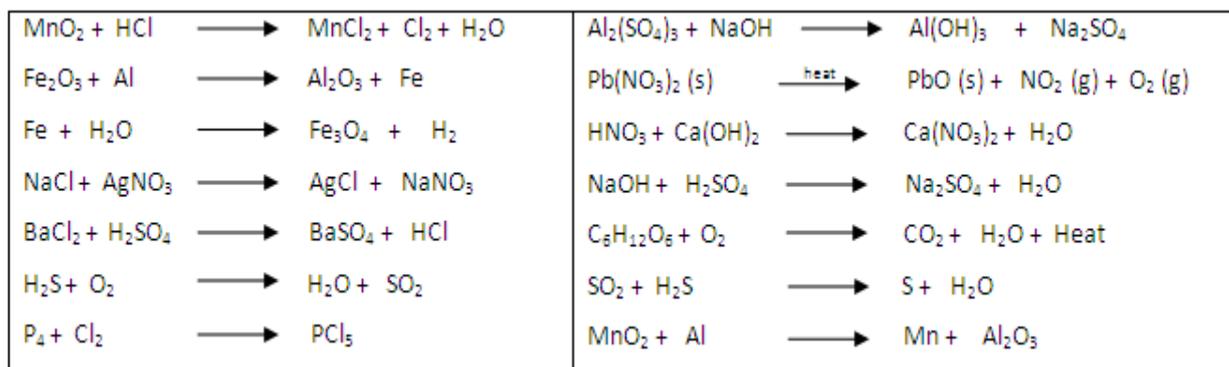
CHEMISTRY

1.   A student has been collecting silver and copper coins. One day he observed that a black coating on silver coins and a green coating on copper coins. Give the chemical names of the black and green coatings. How are they formed?

2.   Five metals A, B, C, D and F are added to the following solutions one by one. The observations made are below :

Metal	Iron(II) sulphate	Copper(II) sulphate	Zinc sulphate	Silver nitrate	Aluminium sulphate
A	No reaction	**Reddish brown deposit**	Coating on it	Coating on it	---
B	**Grey deposit**	---	No reaction	Coating on it	---
C	No reaction	No reaction	No reaction	**White deposit**	---
D	No reaction	No reaction	No reaction	No reaction	No reaction
E	---	**Reddish brown deposit**	New coating	New coating	No reaction

Answer the following questions based on above observations-

(a)   Which is the most active metal and which is the least reactive? Why?

(b)   What would be observed when (a). B is added to a solution of copper (II) sulphate and   (b). E is added to the solution of iron sulphate? Explain, why?

(c)   Arrange the metals A, B, C, D and E in order of increasing reactivity.

(d)   Container of which metal can be used to store both zinc sulphate solution and silver nitrate solution.

(e)   Which of the above solutions can be easily stored in a container made up of these metals?

3. Balance the following chemical reactions –

$MnO_2 + HCl \longrightarrow MnCl_2 + Cl_2 + H_2O$	$Al_2(SO_4)_3 + NaOH \longrightarrow Al(OH)_3 + Na_2SO_4$
$Fe_2O_3 + Al \longrightarrow Al_2O_3 + Fe$	$Pb(NO_3)_2 (s) \xrightarrow{heat} PbO (s) + NO_2 (g) + O_2 (g)$
$Fe + H_2O \longrightarrow Fe_3O_4 + H_2$	$HNO_3 + Ca(OH)_2 \longrightarrow Ca(NO_3)_2 + H_2O$
$NaCl + AgNO_3 \longrightarrow AgCl + NaNO_3$	$NaOH + H_2SO_4 \longrightarrow Na_2SO_4 + H_2O$
$BaCl_2 + H_2SO_4 \longrightarrow BaSO_4 + HCl$	$C_6H_{12}O_6 + O_2 \longrightarrow CO_2 + H_2O + Heat$
$H_2S + O_2 \longrightarrow H_2O + SO_2$	$SO_2 + H_2S \longrightarrow S + H_2O$
$P_4 + Cl_2 \longrightarrow PCl_5$	$MnO_2 + Al \longrightarrow Mn + Al_2O_3$

4. Give reasons for the following –

   (a) Keeping food in air tight containers help in preventing rancidity.
   (b) White coloured silver chloride turns grey when kept in sunlight.

   (c) Can a displacement be a redox reaction?

   (d) Corrosion of aluminium is considered to be advantageous.

   (e) Respiration is considered an exothermic process.

   (f) We cannot stir silver nitrate solution with copper spoon.

   (g) Gold and platinum do not get affected even if there is a presence of moist air and

   acidic gases.

   (h)   How will you define rust chemically? Write the steps to prevent rusting.

5. Prepare a project file on types of chemical reaction.

BIOLOGY

1. Write at least 20 amazing facts related to the biological world.
2. Draw diagrams (any one) on the chart

   (a) Digestive System

   (b) Respiratory System

   (c) Human Heart

   (d) Excretory System

3. **Food for Health**- Fast food is not good for health. Compose a story with the above message wherein a girl explains to her younger brother, the bad effects of eating bad food.

4. Worksheet –

   (a) Name the product and by product of photosynthesis.

   (b) What are the raw materials of photosynthesis?

   (c) Name the three secretions of gastric glands.

   (d) What is the function of mucus in gastric gland?

   (e) Give the functions of hydrochloric acid for the body.

   (f) What is the role of pepsin in stomach?

   (g) Why pancreas is called mixed gland?

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हिंदी

1. क्षितिज पद्य-खंड सूरदास एवं देव कवि याद करें।
2. नेताजी सुभाष चंद्र बोस के व्यक्तित्व और कृतित्व पर एक प्रोजेक्ट बनाइए।
3. सीमा पर तैनात फौजी ही देश प्रेम का परिचय नहीं देते हम सभी अपने दैनिक कार्यों में किसी न किसी रूप में देश प्रेम प्रकट करते हैं। अपने जीवन जगत से जुड़े ऐसे और कार्यों का उल्लेख कीजिए और उन पर अमल कीजिए।
4. विक्रम संवत कैलेंडर तैयार करें।
5. अपनी मातृभाषा के शिष्टाचार सूचक कथनों की एक सूची तैयार कीजिए।
6. आप अपने विद्यालय में हिंदी वाद विवाद प्रतियोगिता का आयोजन किस प्रकार करवाएगें, क्रमानुसार लिखें।
7. पाँच वर्ष पश्चात आप स्वयं को कहाँ देखते हैं? लिखें।
8. अपने जीवन के प्रेरणा स्त्रोत के विषय में लिखें।
9. एक मौलिक कहानी लिखिए जिसका अंत निम्नलिखित पंक्तियों से हो...

    मनुष्य की पहचान उसके मानवीय गुणों के आधार पर होती है।
10. **बोलती दीवारें'** कार्यक्रम के अंतर्गत अपने कक्षा-कक्ष में प्रदर्शन हेतु एक हिंदी रचना तैयार करें।
11. अपने स्वयं,परिवार,गांव,विद्यालय,देश के विषय में लेख लिखिए।
12. क्षितिज गद्य एवं पद्य खंड के समस्त लेखक/कवि के विषय में(First Term) लिखे व एक प्रोजेक्ट फाइल तैयार करें।

GEOGRAPHY

1. What is Resource Planning? How is it being done in India? Explain with the help of suitable examples.

2. Prepare a case study report on Inter state River Disputes of India. Mark their locations on the outline map of India.

3. Draw and label the following on map of India by using stencil, colours and symbols.

   (a) India - Rivers and Multi Purpose projects.

   (b) India- Soil types.

   (c) India- Minerals- coal, petroleum, bauxite, iron ore etc.

   (d) India- Industries- Iron and steel, Cotton textiles etc.

   (e) India- Major Sea and air ports.

   (f) India- Nuclear Power plants.

ECONOMICS

1. Visit any Bank near locality and enquire about the loan procedure and terms and conditions of loan.

2. Research and Prepare a report on the current status of FDI (Foreign Direct Investment in India) and its advantages in India.

3. Meet and interact with 5 agricultural labours and 5 service class personals (govt. or private) near your locality and enquire about their working environment, conditions and economic benefits. Write an article about your learning experiences.

DISASTER MANAGEMENT

1.   Prepare a case study report on recently occurred tropical cyclone "Faani" in Bay of Bengal and how efficiently it was managed and mitigated by Govt. of India.

HISTORY & POLITICAL SCIENCE

1.   Learn chapter number 1-3 of history.
2.   On the outline political map of India locate all the important centers of Indian National Movement.
3.   From chapter number 3 of History, write the role of five Indian National Movement leaders in the freedom struggle of India.
4.   Write a survey report on any three national political parties of India.
5.   What is power sharing?

ENGLISH

1.   Listen/watch English News daily.

2.   Write seven articles on different social (roll no 1 to 11), political(roll nos. 12 to 24) and general issues(roll nos. 25 to 35). (Word Limit:200 words for each article).

3.   Read one story book and write the review for the same.(Word Limit:400 to 500 words).

4.   Write five stories with different theme. (Word Limit:200 words for each story).

5.   Write five new words daily and use them in meaningful sentences.

6.   Revise the syllabus covered in the class till date.

FIT

1.   Prepare a power point presentation (PPT) about an historical place near to your   home town and full description of that place and write/burn the presentation in a CD   and   submit   to   subject teacher after Summer Vacations on 29 June 2019.

MATHEMATICS

EUCLID DIVISION ALGORITHM

1.   **Objective:** Study various aspects of Euclid Division Lemma and Algorithm.

2.   **Description:** Study some or all of the following aspects of the theorem:

   (a)   Biography of Euclid.
   (b)   Statement of the theorem.
   (c)   Everyday illustrations/ applications of the algorithm. Methodology is primarily literature survey/ library work, authenticate resource material from internet like NCERT, Homi Baba, NBHM etc.

3.   Make a pocket math dictionary covering the definitions, facts and formulae of all the concepts that you have learnt in class IX. The following units should be covered:
   (a)   Number System
   (b)   Algebras
   (c)   Geometry
   (d)   Mensuration
   (e)   Statistics
   (f)   Probability

Do the following questions in your regular note book:

1. Find the HCF of the integers 4284 and 6762. Hence, find the LCM of the numbers.

2. Given that HCF (306, 1314) = 18, find LCM (306, 1314).

3. Given that HCF (2520, 3300) = 20, find LCM (2520, 3300).

4. Find the HCF of 336 and 54 by the prime factorisation method. Hence find their LCM.

5. Find the HCF of 105 and 1515 by prime factorisation method. Hence find their LCM.

6. Find HCF and LCM of the following integers by prime factorisation method.
   (i) 24, 60, 150   (ii) 120, 105, 150.

7. Show that one and only one out of n, n + 3, n + 6 or n + 9 is divisible by 4.

8. All the following to be answered in one word, one sentence or as per the exact requirement:
   (a) Give the formal statement of Euclid's division algorithm.
   (b) If d = HCF (18, 24), then write the value of d.
   (c) If p = LCM (18, 24), then write the value of p.
   (d) Let a, b, q and r be positive integers such that a > b, r < b, a = b x q + r and HCF (a, b) = 2 k x HCF (b, r). Write the value of k.
   (e) State, in which form an odd integer greater than 1 can be expressed by using only positive integers.

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9. Use Euclid's division algorithm to find the HCF of the following pairs of positive integers:
   (a) 105 and 245
   (b) 305 and 793
   (c) 3444 and 410
   (d) 2775 and 296

10. There are 120 boys and 114 girls in class X of a school. Principal of the school decided as a policy matter to have maximum number of mixed sections, each section has to accommodate equal number of boys and equal number of girls. What is the maximum number of such sections?

11. The length and breadth of a rectangular field are 55 m and 45 m, respectively. Determine the length in metres of the largest rod which can measure the length and breadth of the field exactly.

12. The length, breadth and height of a room are 8·25 m, 6·75 m and 4.50 m, respectively. Find the length of the longest rod in centimeters which can measure the three dimensions of the room exactly.

13. 96 books of English, 240 books of Hindi and 336 books of Mathematics have to be packed in bundles when each bundle must contain equal number of books of one subject out of the three subjects. Find the largest number of books which can be packed in each bundle. Also find the least number of bundles which can be made.

14. Show that every positive odd integer is of the form 2q + 1 where q is some whole number.

15. Show that any positive odd integer is of the form 4q + 1 or 4q + 3, where q is some whole number.

16. Show that any positive odd integer is of the form 8q + 1, or 8q + 3, or 8q + 5, or 8q +7, where q is some integer.

17. Show that any positive even integer is of the form 6 q. or 6q + 2, or 6q + 4. Where q is some integer.

18. Show that one and only one out of n, n + 2 or n + 4 is divisible by 3, where n is any positive integer.

19. Show that one and only one out of n, n + 1 or n + 2 is divisible by 3, where n is any positive integer.

20. Show that one and only one out of n, n + 1, n + 2 or n + 3 is divisible by 4. Where n is any integer.

21. If n be any positive integer, the~ by using Euclid's algorithm, show that can be expressed in the form 3 q or 3 q + 1, where q is some integer.

22. If n be any positive integer, then by using Euclid's division algorithm, show that:
    (i) n^3 can be expressed in the form 9 m, 9 m + 1 or 9 m + 8.
    (ii) n^3 + 1 can be expressed in the form 9 m, 9 m + 1 or 9 m + 2. Here, m is some integer.
23. Find the HCF of 12576 and 4052 with the help of Euclid's division algorithm.

24. Use Euclid's division algorithm and find the largest number which divides 867 and 255.

25. By using division algorithm find the largest number which when divides 147 and 234, the remainders obtained are 12 and 9, respectively.

26. Find the largest number that will divide 398, 436 and 542 leaving remainders 7, 11 and 15, respectively. .

27. Use Euclid's algorithm to find the HCF of 56 and 72 and hence express the HCF in the form 56 x + 72 y where x and y be integers.

28. Sandeep donated 75 glucose biscuits and 45 Monaco biscuits to the students of a class. These are to be packed in identical packets. The two type of biscuits are to be packed separately and each containing the equal number of biscuits. Find the least number of packets which can be made for the two types and also the number of biscuits in each packet.

29. An army contingent of 798 is to march behind an army band of 28 members in a parade. The two groups are to march in the same number of columns. What is the maximum number of columns in which they can march?