HOLIDAY HOMEWORK
Science

Chemical reaction and equation

Q1. What happens chemically when quick lime is added to water?

Q2. How will you test for the gas which is liberated when HCL reacts with an active metal?

Q3. What is an oxidation reaction? Is it exothermic or endothermic? Give one example of oxidation Reaction.

Q4. Give an example of photochemical reaction.

Q5. Give an example of a decomposition reaction. Describe any activity to illustrate such a reaction by heating.

Q6. Why is respiration considered as exothermic process?

Q7. Balance the following chemical equation.

$Fe(s) + H_2O(g) = Fe_3O_4 + H_2(g)$

$MnO_2 + HCL = MnCl_2 + Cl_2 + H_2O$

$HNO_3 + Ca(OH)_2 = Ca(NO_3)_2 + H_2O$

Q8. On what basis is a chemical equation balanced?

Q9. State any two observations in an activity suggesting the occurrence of a chemical reaction.

Q10. Name a reducing agent which may be used to obtain manganese from manganese dioxide.

Q11. What change in colour is observed when silver chloride is left exposed to sunlight? Also mention the type of chemical reaction.

Q12. Define a combination reaction. Give one example of an exothermic combination reaction.

Q13. What is observed when a solution of potassium iodide is added to lead nitrate solution? What type of reaction is this? Write a balanced chemical equation for this reaction.

Q14. Distinguish between an exothermic and an endothermic reaction.

Q15. Distinguish between a displacement and a double displacement reaction.

Q16. Identify the type of reaction in the following:

$Fe + CuSO_4(aq) = FeSO_4(aq) + Cu(s)$.

Q17. What is a redox reaction?

Q18. What is corrosion? Explain its advantage and disadvantage.

Q19. Why is photosynthesis considered as an endothermic reaction?

Q20. In electrolysis of water, why is the volume of gas collected over one electrode double that of the other electrode?

Q 21. What happens when water is added to solid calcium oxide taken in a container? Write a chemical formula for the same.

Q 22. Give one use of quick lime.

Life Processes:

1. How is 'respiration' different from 'breathing'? Explain the process of aerobic and anaerobic respiration.

2. I)   Name the blood vessel that brings oxygenated blood to the human heart.

   II)   Which chamber of the heart received oxygenated blood?

   III) Explain how is the oxygenated blood from this particular chamber sent to all the body parts?

3. Explain the schematic representation of gaseous exchange in tissues.

4. Compare the functioning of alveoli in the lungs and nephrons in the kidneys with respect to their structures and functioning?

5. What is the significance of emulsification of fats?

6. Why is the small intestine in herbivores larger than in carnivores?

7. What is the advantage if a four chambered heart?

8. Explain the process by which inhalation occurs during breathing in human beings?

9. In human alimentary canal, name the site of complete digestion of various components of food. Explain the process of digestion.

10. List in tabular form, three differences between arteries and veins.

11. List the three kinds of blood vessels of human circulatory system and write their functions in tabular form.

12. (a) "The breathing cycle is rhythmic whereas exchange of gases is a continuous process". Justify this statement.

     (b) What happens if conducting tubes of circulatory system develops a leak? State in brief, how could this be avoided?

     (c) How opening and closing of stomata takes place?

13. Draw a diagram of the front view of human heart and label any six parts including at least two that are concerned with arterial blood supply to the heart muscles.

14. Describe in brief the function of kidneys, ureters, urinary bladder and urethra.

15. Explain the process of breakdown of glucose in a cell

     (i)   in the presence of oxygen,

     (ii) in the absence of oxygen.

16. What is double circulation in human beings? Why is it necessary?

17. (a) Name two different ways in which glucose is oxidised to provide energy in various organism.

     (b) Write any two differences between the two oxidation of glucose in organisms.

18. Write any three differences between aerobic and anaerobic respiration.

19. (a) Name the process by which autotrophs prepare town food.

     (b) List the three events which occur during this process.

     (c) State two sources from which plants obtain nitrogen for the synthesis of proteins and other compounds.

*Complete all the in-text and exercise questions of chemical reaction and equation & life processes.

Control and coordination:

Question 1
Why is control and coordination system necessary in organisms?
Question 2
What is homeostasis?
Question 3
Give examples of some of the movements shown by plants.
Question 4
What are growth regulators?
Question 5
What are the stages of growth in plants?
Question 6

Name the different phytohormones.
Question 7
What are the control and coordination mechanisms developed in animals?
Question 8
How does the conduction of messages take place in?
(i) Nervous system
(ii) Endocrine system
Question 9
What are the functions carried out by the nervous system in human beings?
Question 10
What are the units of nervous system?
Question 11
What is an impulse?
Question 12
What are the two potentials that are generated while transmission of an impulse?

Complete the in-text and exercise questions of control and coordination.

HINDI

SOCIAL SCIENCE

THE CHAPTERS COVERED

1. RISE OF NATIONALISM IN EUROPE(H)
2. NATIONALISM IN INDIA(H)
3. RESOURCES AND DEVELOPMENT(G)
4. WATER RESOURCES(G)
5. POWER SHARING(P)
6. DEVELOPMENT(E)

INDIA AND THE CONTEMPORARY WORLD

I. Write short note on the given topics.

1. Frederic Sorrieu
2. Ernst Renan and his theory of Nation
3. Various measures and practices that could create a sense of collective identity amongst the French People.
4. The Civil Code of 1804
5. Liberal Nationalism
6. Zollverein
7. Conservatism
8. The treaty of Vienna
9. Giuseppe Mazzini
10. The Greek War of Independence
11. Romanticism
12. Frankfurt Parliament
13. Role of Bismarck in Unification of Germany
14. Role of Cavour and Garibaldi in Unification of Italy
15. The making of United Kingdom of Britain
16. Marianne
17. Germania
18. The Balkan became the scene of big power rivalry.
19. Impact of First World War on India
20. The idea of Satyagraha
21. The Rowlatt Act
22. Jallianwala Bagh Massacre
23. Non-Cooperation in Hind Swaraj by Gandhiji
24. Programmes under the Non-Cooperation
25. Civil-Disobedience Movement
26. Mahatma Gandhi- from 1915 to 1933.

II. Map work

1. Locate and label the following and write brief information of the same in the outline map of India

   A. Champaran
   B. Chauri-chaura
   C. Jallianwala-Bagh
   D. Kheda

   E. Dandi
   F. Sabarmati Ashram
   G. Poona

CONTEMPORARY INDIA

I.   Write Short Note on the given topics.
1.   Classification of Resources
2.   Sustainable Development
3.   Resource Planning in India
4.   Land use pattern in India
5.   Land degradation and Conservation measures
6.   Classification of Soils
7.   Features of Black and Alluvial Soils
8.   Factors of Soil Erosion
9.   Measures required for Soil Conservation
10. Water scarcity
11. Need for water conservation and management
12. Merits and limitations of Multi-Purpose River Projects/ DAM
13. Rainwater Harvesting in different parts of India

II. Map work
1.   Locate and label the regions of following soil in an outline map of India.

A.   Forest and   D.   Black Soil
     Mountainous Soil   E.   Laterite Soil
B.   Alluvial Soil   F.   Arid Soil
C.   Red and Yellow Soil

2.   Locate and label the following rivers and dams in an outline map of India.

A.   Ganga   I.   Krishna
B.   Yamuna   J.   Kaveri
C.   Indus   K.   Salal Project
D.   Brahmaputra   L.   Bhakra Nangal Dam
E.   Narmada   M.   Sardar Sarovar Dam
F.   Tapi   N.   Nagarjuna Sagar
G.   Mahanadi   O.   Hirakud Dam
H.   Godavari

DEMOCRATIC POLITICS

I.   Write short note on the given topics.
1.   Power sharing arrangement in Belgium
2.   Power Sharing arrangement in Sri Lanka
3.   Forms of Power sharing
4.   Why power sharing is Desirable?

ECONOMICS

I.   Write short note on the given topics.
1.   Different people, different goals
2.   Give some examples where factors other than income are important aspects of our lives.
3.   Per Capita income- Average income
4.   Does availability of good health and educational facilities depend only on amount of money spent by the government on these facilities? What other factors could be relevant?
5.   BMI (BODY MASS INDEX)
6.   In what respects is the criterion used by the UNDP for measuring development different from the one used by the World Bank?
7.   Why is the issue of sustainability important for development?
8.   "The Earth has enough resources to meet the needs of all but not enough to satisfy the greed of even one person". How is this statement relevant to the disscusion of development? Discuss.

ENGLISH

I. Read the following lessons from the textbooks:

FIRST FLIGHT-

• A Letter to God (G.L. Fuentes)
• Nelson Mandela: Long Walk to Freedom (Nelson Rolihlahla Mandela)
• Two Stories About Flying

FOOTPRINTS WITHOUT FEET-

• A Triumph of Surgery (James Herriot)
• The Thief's story

II. Write the summary of the poems with the theme:

• Dust of Snow
• Fire and Ice
• A Tiger in the Zoo

III. Watch English news daily to equip yourself with the information and facts to be used as
content in the writing skills.

IV. Satish is asked to write an article for the school magazine on 'Climate Change'. Using your
ideas and the hints given below, write an article on his behalf in 120 words.

 Human activities- burning fossil fuels – releases carbon dioxide-rise in Earth's

temperature- causes sea level changes – adversely affects precipitation,

seasons, flora and fauna.

V. Smartphone is one of the most important means of communication today. But it has also
become a nuisance for some. Write an article on the same in around 120 words and sign
yourself as Tarun/Taruna, a student of class X. You may take help from the following inputs:

Important means of communication – connects a person socially- keeps people

updated- has become a virtual companion- many disadvantages- disrupts peace of

mind- a constant source of disturbance- excessive usage leads to many health

disorders- cause of deadly accidents on road- the biggest distraction for students should

be used wisely- use to be minimised.

MATHS

Real Numbers

1. Find the HCF of 180, 252 and 324 by using Euclid's division lemma.

2. Write the HCF of the smallest composite number and the smallest prime number.

3. The length, breadth and height of a room are 8 m 25 cm, 6 m 75 cm and 4 m 50 cm, respectively. Find the length of the longest rod that can measure the three dimensions of the room exactly.

4. If HCF (28, 35 and 343) =7, find the LCM (28, 35 and 343).

5. Show that one and only one out of **n, n + 2 or, n + 4** is divisible 13, where **n** is any positive integer.

6. Find the largest number which divides 615 and 963 leaving remainder 6 in each case.

7. If the HCF of 408 and 1032 is expressible in the form 1032m - 408 x 5 ,find **m**.

8. If the HCF of 657 and 963 is expressible in the form 657x + 963 x -15 find **x.**

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

10. The HCF of two numbers is 16 and their product is 3072.

11. The LCM and HCF of two numbers are 180 and 6 respectively. If one of the numbers is 30, find the other number.

12. In a morning walk three persons step off together, their steps measure 80 cm, 85 cm and 90 cm respectively. What is the minimum distance each should walk so that he can cover the distance in complete steps?

13. Prove that (4-5$\sqrt{2}$) is an irrational number.

14. Show that (5-2$\sqrt{3}$) is an irrational number.

15. Prove that $\sqrt{5}$ is an irrational number.

16. Explain, why (7 x 11 x 13) + 13 and (7 x6x5x4x3x2x1)+ 5 are composite numbers?

17. Write the HCF of the smallest composite number and the smallest prime number.

18. Two tankers contain 850 L and 680 L of petrol, respectively. Find the maximum capacity of a container which can measure the petrol of either tanker, in exact number of times.

19. Use Euclid's division lemma to show that the square of any positive integer is either of the form 3m or 3m + 1, for some integer m.

20. State the Euclid's Division Algorithm.

POLYNOMIALS

1. Show that 3, -1 and -2 are zeroes of the polynomial $2x^3$ - $3x^2$ - 8x - 3.

2. If x + 2 is a factor of the polynomial $5x^3$ + (k + 2) x^2 - 3kx + 2, then find the value of k.

3. Find the zeros of the polynomial $f(x) = 4\sqrt{3}\ x^2 + 5x - 2\sqrt{3}$, and verify the relationship between the zeros and its coefficients.

4. If α and β are zeroes of $2x^2 - 5x + 3$, then find the values of

(i) $\alpha^2 + \beta^2$ (ii) $1/2\alpha + 1/2\beta$ (iii) $\alpha/\beta + \beta/\alpha$

5. If the zeroes of the polynomial $x^3 - 3x^2 + x + 1$ are **a-b**, **a** and **a+b**, find the values of **a** and **b.**

6. Find a quadratic polynomial whose zeroes are

(i) 3,-7/5   (ii) $3-\sqrt{5}, 3+\sqrt{5}$

7. Divide $(8 + 19x + x^2 - 6x^3)$ by $(2 + 5x - 3x^2)$ and verify the division algorithm.

8. If the polynomial $(6x^4 + 8x^3 + 17x^2 + 21x + 7)$ is divided by another polynomial $(3x^2 + 4x + 1)$, the remainder comes out to be $(ax + b)$, find the values of a and b.

9. Show that 3 is a zero of the polynomial **$2x^3-x^2-13x-6$** . Hence, find all the zeroes of this polynomial.

10. Find all zeroes of the polynomial $x^4 - 5x^3 - 12x^2 + 11x - 2$, if two of its zeroes are $2+\sqrt{3}$ and $2-\sqrt{3}$.

11. Find the zeroes of the polynomial $p(x) = x^3 - 5x^2 - 2x + 24$, if it is given that the product of its two zeroes is -8.

12. What should be added to the quadratic polynomial $x^2 - 5x + 4$ so that 3 is a zero of the resulting polynomial?

13. If two zeroes of the polynomial $x^4 - 6x^3 - 26x^2 + 138x - 35$ are $2 \pm \sqrt{3}$, find other zeroes.

Pair of linear equations in two variables

1. Find the value(s) of **k** for which the following pairs of linear equations have a unique solution:

(i) 7x - 5y - 4 = 0   (ii) 2x + 3y - 5 = 0

    14x+ky+4=0   kx - 6y - 8 = 0

2. Find the value(s) of p for which the following pairs of linear equations have no solution:

(i) -x + py = 1   (ii) (3p + 1)x + 3y = 2

    px - y =1 $(p^2+1)x +(p-2)y-5=0$

3. Find the value(s) of k for which the following pairs of linear equations have infinite solutions:

(i) 10x + 5y - (k - 5) = 0   (ii) kx + 4y = k - 4

    20x + 10y - k = 0   16x+ky=k

4. For what value of k, the following pair of linear equations has

(i) a unique solution   (ii) no solution

              2x+ky=1,

              3x-5y=7.

5. Find the value(s) of p for which the lines represented by the following pair of linear equation intersect at a unique point: -3x + 5y = 7 and 2px - 3y = 1.

6. For what value(s) of k, the following pair of linear equations has

(i) no solution   (ii) infinitely many solutions   (iii) unique solution

              kx+3y=k-3,   12x+ky=k.

7. Determine graphically, the vertices of the triangle formed by the lines y = x, 3y = x and x + y = 8.

8. Which of the following pairs of linear equations are consistent/inconsistent? If consistent, obtain the solution graphically:

(1)   x + 3y = 6   (ii) 2x + y - 6 = 0   (iii) x-y = 8

    2x + 6y = 12   4x - 2y - 4 = 0   3x-3y=16

9. Solve the following pair of linear equations by substitution method:

(b/a) x + (a/b) y = $a^2 + b^2$ and x + y = 2ab.

10. Solve the following pairs of linear equations by the substitution method:

(i) $mx - ny = m^2+n^2$ (ii) $(2x/a)+(y/b)=2$

   $X+y=2m$ $(x/a)-(y/b)=4$

11. Solve the following pairs of linear equations by the elimination method:

(i) $(x/3)+(y/4)=4$

   $(5x/6)-(y/8)=4$

12. Solve the following pairs of linear equations:

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

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

13. Solve the following pair of linear equations:

$43x + 67y = -24$

 $67x + 43y = 24$

14. (i) For which values of p and q, will the following pair of linear equations have infinitely many solutions?

 $4x + 5y = 2$ and $(2p + 7q)x + + 8q) y = 2q — p + 1)$

   (ii) For which values of a and b, will the following pair of linear equation represent coincident lines?

 $x + 2y = 1$ and $(a - b)x + (a + b)y = a + b - 2$.

15. The ratio of incomes of two persons is 9: 7 and the ratio of their expenditures is 4: 3. If each of them manages to save 2000 per months, find their monthly incomes.

16. Solve the following system of linear equations by cross multiplication method

$2(ax - by) + (a + 4b)=0$

$2(bx + ay) + (b - 4a) =0$.

17. Solve the following pairs of equations by reducing them to pairs of linear equa±c1-

(i) $(3a/x)-(2b/y)+5=0$

   $(a/x)+(3b/y)-2=0$

30. Solve the following pairs of equations:

(i) $99x + 101y = 499xy$

   $101x+99y=501xy$

18. If the numerator and denominator of a fraction are increased by 2 and 1 respectively, it becomes ¾. If the numerator and denominator are decreased by 2 and 1 respectively, it becomes 1/2. Find the fraction.

19. A man earns Rs.600 per month more than his wife. One-tenth of the man's salary and one-sixth of the wife's salary amount to Rs.1500, which is saved every month. Find their monthly expenditure.

20. Four years ago, a father was six times as old as his son. Ten years later, the father will be two and a half times as old as his son. Determine the present age of father and his son.