Bal Bharati PUBLIC SCHOOL Jharli

Subjects	CLASS – X Summer Holidays Homework
English	• Revise the taught syllabus. • Water is precious and each one of us must stop wastage. Design a poster in not more than 50 words urging people to employ various methods of rain water harvesting in their colonies. Usage of language and catchy slogan would earn special appreciation. • Describe the following faces within 50 words. Suggest some situations when it happens and what does each face say?  • Script Writing -Write a script on any SOCIAL ISSUE. It should be divided into IV scenes. Name of the characters should be written on a different page. Take care sentences should not be long or complex. • How to do: Use A-4 size sheet Parameters: content, presentation, setting of a plot
Hindi	1. प्रतिदिन एक सुलेख के हिसाब से कुल 20 सुलेख लिखो। 2. अभी तक पढ़ाए गए पाठों की पुनरावृत्ति(याद) करो। 3. मैथिलीशरण गुप्त द्वारा रचित राष्ट्रवादी काव्य "भारत-भारती" को पढ़कर, उसमें बताई गयी बातों तथा तथ्यों को व्याख्यायित करते हुए एक ऑडियो-वीडियो का निर्माण कर यूट्यूब लिंक सेंड करो।
Mathematics	Measure length, breadth and height of your room and find total

<table>
<tr><td></td><td>surface area (in square feet) and volume of your room. Find the cost of white washing the walls of the room and the ceiling at the rate of Rs. 15 per square feet. Find the capacity of Air Conditioner (In Tons) required for this room. Make the video of this procedure.

Revise Ch. 1 and Ch. 2.</td></tr>
<tr><td>Science</td><td>1. Practice 30 balancing of equations.
2. Frame all the possible questions from the activities of chapter - 1.
3. Make a model of digestive system, Respiratory system.
4. Solve the given assignment. (Physics , Chemistry and Biology)</td></tr>
<tr><td>Social Science</td><td>Activity – Advertisement Making
Topic - Consumer Awareness
Instruction - Make a 3 to 5 Minutes Advertisement Video on the topic Consumer Awareness

<table>
<tr><td colspan="2">Revise the Following Chapters :</td></tr>
<tr><td>India and the Contemporary World- II</td><td>The Rise of Nationalism in Europe</td></tr>
<tr><td>Contemporary India</td><td>Resources and Development</td></tr>
<tr><td>Democratic Politics</td><td>Power Sharing</td></tr>
<tr><td>Economics</td><td>Development</td></tr>
<tr><td colspan="2">Answer the questions mentioned in the given assignment.</td></tr>
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Mathematics – Worksheet

Solve the given worksheet

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) $\alpha^3 + \beta^3$

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

Q.4. If '1' is one of the zeroes of the polynomial $p(x) = 7x – x^3 – 6$ find its other zeroes.

Q.5. Find the quadratic polynomial, sum and product of whose zeroes are 2 and – 1 respectively.

Q6. If the sum of the zeroes of the quadratic polynomial $kx^2 + 2x + 3k$ is equal to their product, find k.

Q.7. Find the ratio of the sum and product of the zeroes of the polynomial $5x^2 + 2x – 10$.

Q.8.Divide $3 – x + 2x^2 + x^3 – 3x^4$ by $(2 – x)$ and verify by division algorithm.

Q.9. Find all the zeroes of the polynomial $p(x) = x4 – 7x^3 + 9x^2 + 13x – 4$, if two of its zeroes are $2 + \sqrt{3}$and $2 - \sqrt{3}$.

Q10. What must be subtracted from $8x^4+ 14x^3 - 2x^2 + 7x – 8$ so that the resulting polynomial is exactly divisible by $4x^2 + 3x – 2$.

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) $2x – 3y = 1$; $k x + 5y = 7$

b) $4x – 5y = k$; $2x – 3 y = 12$

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) $x + (k+1) y =5$; $(k+1) x + 9 y = 8k – 1$

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

Assignment - Social Science

1) Describe the process of unification of Germany.
2) Describe the process of unification of Britain.
3) 'Nationalism no longer retained its idealistic liberal democratic sentiments by the last quarter of the 19th century in Europe'. Analyse the statement with examples.
4) How had revolutionaries spread their ideas in many European states after 1815. Explain with examples.
5) How did Balkans become the most serious source of nationalist tension in Europe after 1871? Explain with examples.
6) Explain any three ways in which nationalists feelings were kept alive in Poland in the 18th and 19th century.
7) Give detail about the unification of Italy.
8) Explain any three causes of conflict in the 'Balkan area' after 1871.
9) Explain the consequences of indiscriminate use of resources by human beings. How has the indiscriminate use of resources led to the necessity of resource development or resource planning ?

10) Explain the three stages of Resource Planning in India.
11) "Planning of resources is very important for a country like India". Justify by giving three reasons.
12) Explain any four human activities which are mainly responsible for land degradation in India.
13) What are the ways to solve the problem of land degradation ?
14) How is land a natural resource of utmost importance ? Explain with four facts.
15) Explain the three measures taken by Sri Lanka as per the Act passed in 1956.
16) Describe the path of accommodation adopted in Belgium. What were its consequences
17) How the composition of the capital city of Brussels is different from Belgium as a country ?
18) What do you learn from the principles followed in Belgium and Sri Lanka i.e., majoritarianism in Sri Lanka and accommodation in Belgium ?
19) Differentiate between horizontal and vertical power sharing in modem democracies.
20) "Both Belgium and Sri Lanka are democracies but they follow different systems of power sharing." Support the statement by giving three points of difference.
21) What was the cause of tension between Dutch-speaking and French-speaking communities during 1950s and 1960s ?
22) Give an example of power sharing among different political parties in a democracy.
23) Why the system of 'reserved constituencies' is adopted in India ?
24) Mention any four characteristics of development.
25) 'What may be development for one may not be development for the other.' Explain by giving examples.
26) 'Human development is the essence of social development.' Explain.
27) What are the limitations of the per capita income criteria of development ?
28) Besides income, what can be the other attributes to compare economic development?

29) Why are public facilities needed for the development of the country ? Explain four public facilities.

30) What is meant by sustainable development? Explain it by taking the case study of water.

LIFE PROCESSES - REVISION WORKSHEET

(A) Multiple Choice Questions

Q1. Which of the following is the correct equation for the summary of photosynthesis?

a. $6CO_2 + 12H_2O \longrightarrow C_6H_{12}O_6 + 6O_2 + 6H_2O$
b. $6CO_2 + H_2O$ + sunlight $\longrightarrow C_6H_{12}O_6 + O_2 + 6H_2O$
c. $6CO_2 + 12H_2O$ +chlorophyll+ sunlight $\longrightarrow C_6H_{12}O_6 + 6O_2 + 6H_2O$
d. $6CO_2 + 12H_2O$ chlorophyll+ sunlight $\longrightarrow C_6H_{12}O_6 + 6O_2 + 6H_2O$

Q2. Products of anaerobic respiration in muscles are

a. Lactic acid and energy
b. Lactic acid ,carbon dioxide and energy
c. Lactic acid ,water ,carbon dioxide and energy
d. Lactic acid , water , and energy

Q3. Which of the following statements are true about respiration

a. During inhalation , ribs move inward and diaphragm is raised
b. In alveoli exchange of gases takes place Ie oxygen from blood into alveolarair l
c. Haemoglobin has greater affinity for carbon dioxide than oxygen
d. Alveoli increase the surface area for absorption of gases

i. a & d ii. b & c iii. a & c iv. b & d

Q4. The main function of the urinary bladder is to

a. control the pressure of urine in the urinary bladder
b. take the urine from the kidney to the urinary bladder
c. filter blood and remove the urine

d. connect the parts of the excretory system

(B) Assertion and Reasoning

Direction : in the following questions , a statement of assertion (A) isfollowed by a statement of reason (R) . Mark the correct choice as :

a. **Both assertion (A) and reason (R) are true and reason (R) is the correctexplanation of assertion (A)**
b. **Both assertion (A) and reason (R) are true but reason (R) is not thecorrect explanation of assertion (A)**
c. **Assertion (A) is true but reason(R) is false**
d. **Assertion (A) is false but reason(R) is true**

Q5. Assertion: aerobic respiration requires less energy as compared to anaerobicrespiration .

. Reason : mitochondria is the power house of the cell .

Q6. Assertion: human heart is four chambered .

Reason : vena cava is the only artery that supplies deoxygenated blood to theheart

Q7. Assertion: energy is required to carry on different life processes

Reason : energy is obtained in the form of ATP in mitochondria

(C) Answer very briefly

Q9._____enzyme digests starch

Q10. Which is the largest gland in the human body ?

Q11. List a difference between pepsin and trypsin

SECTION B (3 mark questions

Q12. Name the following :

a. The process in plants that links light energy with chemical energy
b. Organisms that can prepare food on their own
c. The cell organelle where photosynthesis occurs
d. Cells that surround the stomatal pore
e. Organisms that cannot prepare their own food

f. An enzyme secreted from the gastric glands in the stomach that acts on proteins

Q13. How are alveoli designed to maximize the exchange of gases?

Q14. Answer as directed

a. Write two water conducting tissues present in plants ? how does water continuously enter into the root system ?

b. Explain why plants have low energy needs as compared to animals

Q15. Answer as directed

a. What is peristalsis ?
b. What will happen if the diaphragm of a person will get ruptured in an accident ?

Q16. How is aerobic respiration different from anaerobic respiration

SECTION C (5 marks)

Q17. Describe the processes of urine formation in the kidneys

Q18. Draw a sectional view of the human heart and label the following

a. The chamber of the heart that pumps out deoxygenated blood b
b. The blood vessel that carries away oxygenated blood from the heart
c. The blood vessel that rece4ives deoxygenated blood from the lower part of ourbody
d. Part that prevents the backward flow of blood

Subject – Physics
Topic – Reflection and Refraction

Q.1. Find the focal length of a convex mirror of radius of curvature 1 m.
Q.2. Focal length of a convex mirror is 50 cm. What is its radius of curvature?

Q.3. Radius of curvature of a concave mirror is 25 cm. What is its focal length?

Q.4. A concave mirror produces 10 cm long image of an object of height of 2 cm. What is the magnification produced?

Q.5. An object 1 cm high is held near a concave mirror of magnification 10. How tall will be the image?

Q.6. An object 4 cm in size is placed at a distance of 25 cm from a concave mirror of focal length 15 cm. Find the position, nature and height of the image.

Q.7. A converging mirror forms a real image of height 4 cm, of an object of height 1 cm placed 20 cm away from the mirror. Calculate the image distance. What is the focal length of the mirror?

Q.8. A 4.5 cm needle is placed 12 cm away from a convex mirror of focal length 15 cm. Give the location of the image and the magnification. Describe what happens as the needle is moved farther from the mirror.

Q.9. An arrow 2.5 cm high is placed at a distance of 25 cm from a diverging mirror of focal length 20 cm., Find the nature, position and size of the image formed.

Q.10. The image formed by a convex mirror of focal length 20cm is a quarter of the object. What is the distance of the object from the mirror?

Q.11. Find the size, nature and position of image formed by a concave mirror, when an object of size 1cm is placed at a distance of 15cm. Given focal length of mirror is 10cm.

Q.12. An object 2cm high is placed at a distance of 16cm from a concave mirror, which produces 3cm high inverted image. What is the focal length of the mirror? Also, find the position of the image.

Q.13. An erect image 3 times the size of the object is obtained with a concave mirror of radius of curvature 36cm. What is the position of the object?

Q.14. A 2.5cm candle is placed 12 cm away from a convex mirror of focal length 30cm. Give the location of the image and the magnification.

Q.15. An object is placed in front of a concave mirror of focal length 20cm. The image formed is 3 times the size of the object. Calculate two possible distances of the object from the mirror.

Q.16. The image formed by a convex mirror is virtual, erect and smaller in size. Illustrate with figure.

Q.17. A concave mirror produces a real image 10mm tall, of an object 2.5mm tall placed at 5cm from the mirror. Calculate focal length of the mirror and the position of the image.

Q.18. An object is placed at a large distance in front of a convex mirror of radius of curvature 40cm. How far is the image behind the mirror?

Q.19. An object is placed 15cm from a convex mirror of radius of curvature 90cm. Calculate position of the image and its magnification.

Q.20. The image formed by a convex mirror of focal length 30cm is a quarter of the object. What is the distance of the object from the mirror?

Q.21. When an object is placed at a distance of 60cm from a convex mirror, the magnification produced is 1/2. Where should the object be place to get a magnification of 1/3?

Q.22. An object is placed 18cm front of a mirror. If the image is formed at 4cm to the right of the mirror. Calculate its focal length. Is the mirror convex or concave? What is the nature of the image? What is the radius of curvature of the mirror?

Q.23. A convex mirror used for rear view on an automobile has a radius of curvature of 3m. If a bus is located at 5m from this mirror, find the position, nature and magnification of the image.

Q.24. An object 3cm high is held at a distance of 50cm from a diverging mirror of focal length 25cm. Find the nature, position and size of the image formed.

Q.25. An converging mirror of focal length 20cm forms an image which is two times the size of the object. Calculate two possible distances of the object from the mirror.

Q.26. The linear magnification of a convex mirror of focal length 15cm is 1/3. What is the distance of the object from the focus of the mirror?

Q.27. The focal length of a convex mirror is 12.5 cm. How far is its centre of curvature (i) from the pole (ii) from the focus.

Q.28. Find the focal length of a concave mirror that produces four times larger real image of an object held at 5cm from the mirror.

Q.29. An object is held at 30cm in front of a convex mirror of focal length 15cm. At what distance from the convex mirror should a plane mirror be held so that images in the two images coincide with each other?

Q.30. Draw any three ray diagrams to show how the size and nature of image of an object change when it move from center of curvature of concave mirror towards the pole of the mirror.

Subject – Chemistry Topic - Chemical Reactions and Equations.

Short Answer Type Questions

1. Write the balanced chemical equations for the following reactions and identify the type of reaction in each case.
   - (a) Nitrogen gas is treated with hydrogen gas in the presence of a catalyst at 773K to form ammonia gas.
   - (b) Sodium hydroxide solution is treated with acetic acid to form sodium acetate and water.
   - (c) Ethanol is warmed with ethanoic acid to form ethyl acetate in the presence of concentrated H_2SO_4.
   - (d) Ethene is burnt in the presence of oxygen to form carbon dioxide, water and releases heat and light.

2. Write the balanced chemical equations for the following reactions and identify the type of reaction in each case.
   - (a) Thermit reaction, iron (III) oxide reacts with aluminium and gives molten iron and aluminium oxide.
   - (b) Magnesium ribbon is burnt in an atmosphere of nitrogen gas to form solid magnesium nitride.
   - (c) Chlorine gas is passed in an aqueous potassium iodide solution to form potassium chloride solution and solid iodine.
   - (d) Ethanol is burnt in air to form carbon dioxide, water and releases heat.

3. Complete the missing components/variables given as x and y in the following reactions

   (a) $Pb(NO_3)_2\ (aq) + 2KI(aq) \longrightarrow PbI_2\ (x) + 2KNO_3(y)$

   (b) $Cu(s) + 2Ag\ NO_3(aq) \longrightarrow Cu(NO_3)_2(aq) + x(s)$

   (c) $Zn(s) + H_2SO_4(aq) \longrightarrow ZnSO_4(x) + H_2(y)$

   (d) $CaCO_3(s) \xrightarrow{x} CaO(s) + CO_2(g)$

4. Which among the following changes are exothermic or endothermic in nature?

- (a) Decomposition of ferrous sulphate
- (b) Dilution of sulphuric acid
- (c) Dissolution of sodium hydroxide in water
- (d) Dissolution of ammonium chloride in water

5. Identify the reducing agent in the following reactions
   - (a) $4NH_3 + 5O_2 \rightarrow 4NO + 6H_2O$
   - (b) $H_2O + F_2 \rightarrow HF + HOF$
   - (c) $Fe_2O_3 + 3CO \rightarrow 2Fe + 3CO_2$
   - (d) $2H_2 + O_2 \rightarrow 2H_2O$

6. Identify the oxidising agent (oxidant) in the following reactions
   - (a) $Pb_3O_4 + 8HCl \rightarrow 3PbCl_2 + Cl_2 + 4H_2O$
   - (b) $2Mg + O_2 \rightarrow 2MgO$
   - (c) $CuSO_4 + Zn \rightarrow Cu + ZnSO_4$
   - (d) $V_2O_5 + 5Ca \rightarrow 2V + 5CaO$
   - (e) $3Fe + 4H_2O \rightarrow Fe_3O_4 + 4H_2$
   - (f) $CuO + H_2 \rightarrow Cu + H_2O$

7. Write the balanced chemical equations for the following reactions
   - (a) Sodium carbonate on reaction with hydrochloric acid in equal molar concentrations gives sodium chloride and sodium hydrogencarbonate.
   - (b) Sodium hydrogencarbonate on reaction with hydrochloric acid gives sodium chloride, water and liberates carbon dioxide.
   - (c) Copper sulphate on treatment with potassium iodide precipitates cuprous iodide (Cu_2I_2), liberates iodine gas and also forms potassium sulphate.

8. A solution of potassium chloride when mixed with silver nitrate solution, an insoluble white substance is formed. Write the chemical reaction involved and also mention the type of

the chemical reaction?

9. Ferrous sulphate decomposes with the evolution of a gas having a characteristic odour of burning sulphur. Write the chemical reaction involved and identify the type of reaction.
10. Why do fire flies glow at night?
11. Grapes hanging on the plant do not ferment but after being plucked from the plant can be fermented. Under what conditions do these grapes ferment? Is it a chemical or a physical change?
12. Which among the following are physical or chemical changes?
    - (a) Evaporation of petrol
    - (b) Burning of Liquefied Petroleum Gas (LPG)
    - (c) Heating of an iron rod to red hot.
    - (d) Curdling of milk
    - (e) Sublimation of solid ammonium chloride

13. During the reaction of some metals with dilute hydrochloric acid, following observations were made.
    - (a) Silver metal does not show any change
    - (b) The temperature of the reaction mixture rises when aluminium (Al) is added.
    - (c) The reaction of sodium metal is found to be highly explosive
    - (d) Some bubbles of a gas are seen when lead (Pb) is reacted with the acid.

    Explain these observations giving suitable reasons.

14. A substance X, which is an oxide of a group 2 element, is used intensively in the cement industry. This element is present in bones also. On treatment with water it forms a solution which turns red litmus blue. Identify X and also write the chemical reactions involved.
15. Write a balanced chemical equation for each of the following reactions and also classify them.
    - (a) Lead acetate solution is treated with dilute hydrochloric acid to form lead chloride

and acetic acid solution.

- (b) A piece of sodium metal is added to absolute ethanol to form sodium ethoxide and hydrogen gas.
- (c) Iron (III) oxide on heating with carbon monoxide gas reacts to form solid iron and liberates carbon dioxide gas.
- (d) Hydrogen sulphide gas reacts with oxygen gas to form solid sulphur and liquid water.

16. Why do we store silver chloride in dark coloured bottles?
17. Balance the following chemical equations and identify the type of chemical reaction.

(a) $Mg(s) + Cl_2(g) \longrightarrow MgCl_2(s)$

(b) $HgO(s) \xrightarrow{Heat} Hg(l) + O_2(g)$

(c) $Na(s) + S(s) \xrightarrow{Fuse} Na_2S(s)$

(d) $TiCl_4(l) + Mg(s) \longrightarrow Ti(s) + MgCl_2(s)$

(e) $CaO(s) + SiO_2(s) \longrightarrow CaSiO_3(s)$

(f) $H_2O_2(l) \xrightarrow{UV} H_2O(l) + O_2(g)$

18. A magnesium ribbon is burnt in oxygen to give a white compound X accompanied by emission of light. If the burning ribbon is now placed in an atmosphere of nitrogen, it continues to burn and forms a compound Y.
    - (a) Write the chemical formulae of X and Y.
    - (b) Write a balanced chemical equation, when X is dissolved in water.

19. Zinc liberates hydrogen gas when reacted with dilute hydrochloric acid, whereas copper does not. Explain why?
20. A silver article generally turns black when kept in the open for a few days. The article when rubbed with toothpaste again starts shining.
    - (a) Why do silver articles turn black when kept in the open for a few days? Name the phenomenon involved.