

<p>ENGLISH</p>	<ol style="list-style-type: none"><li>1. Portfolio</li><li>2. Framing 20 MCQs from the lessons: A Letter to God A Triumph of Surgery Dust of Snow Fire and Ice</li><li>3. MDP Topic: Inspirational Leaders ( Biography of any five inspirational leaders with pictures- their struggles, contributions and achievements to be highlighted , should include world, Indian as well as regional leaders) (10 to 12 pages)</li></ol>
<p>HINDI</p>	<p><b>ग्रीष्मकालीन अवकाशगृहकार्य</b> <b>कक्षा- दसवीं</b></p> <p>प्रश्न 1. पत्र- लेखन</p> <ol style="list-style-type: none"><li>1. अपने क्षेत्र में पार्क विकसित कराने के लिए नगर निगम अधिकारी को पत्र लिखिए।</li><li>2. अपने मित्र को प्रातःकालीन भ्रमण और योग कामहत्व बताते हुए एक प्रेरणा पत्र लिखिए।</li></ol> <p>प्रश्न 2. अनुच्छेद लेखन</p> <ul style="list-style-type: none"><li>- प्रदूषण - कारण और निवारण</li><li>- इंटरनेट कामहत्व</li></ul> <p>प्रश्न 3. रचना के आधार पर वाक्य भेद उदाहरण सहित लिखिए।</p> <p>प्रश्न 4. पढ़ाए गए पाठों के प्रश्न उत्तर याद करने हैं।</p> <p>प्रश्न 5. नेताजी सुभाष चंद्र बोस के व्यक्तित्व और कृतित्व पर एक प्रोजेक्ट बनाइए।</p> <p>प्रश्न 6. संज्ञा, सर्वनाम, विशेषण, क्रिया, क्रियाविशेषण को उदाहरण सहित लिखिए।</p>

## MATHS

GENERAL INSTRUCTIONS: 1. This assignment should be done on a separate ruled sheet. 2. A cover page with the heading MATHS HOLIDAY HOMEWORK should be attached on the top. 3. Illustrate your answer by giving suitable examples/graphs/charts/figures/tables/diagrams wherever necessary. 4. Assignment should be clear, readable, and well presented.

SNO QUESTION 1 Sundaram joined a company for a fixed salary per month. After few months, the management felt happy with his work and multiplied his salary by some  $n$  times. This happened every few months and his salary kept getting multiplied and he reached a salary of 36 K. Every time the management increased the salary by a prime number of times only and his initial salary was 5 K

1.1 How many times management did give incentive to Sundaram?

1.2 What is the maximum increment he got in his salary?

1.3 What is the least incentive he got? What would be his salary had he got the same type of increment every time?

1.4 Had his first salary been 9 K what would be his present Salary?

2 Nobita, Zian and Suzuko are playing a game. Nobita climbs 5 stairs and gets down 2 stairs in one turn. Zian goes up by 7 stairs and comes down by 2 stairs every time. Suzuko goes 10 stairs up and 3 stairs down each time. Doing this they have to reach to the nearest point of 100th stairs and they will stop once they find it impossible to go forward. (They have less number of stairs than required forward stairs).

2.1 Who reaches the nearest point? a) Nobita b) Zian c) Suzuko d) All together reach to the nearest point

2.2 How many times can they meet in between on same step?

2.3 What is the first stair where any two out of three will meet together? 2.4 Who takes least number of steps to reach near hundred. a) Nobita b) Zian c) Suzuko d) All take equal steps.

3. A woman wants to organize her birthday party. She was happy on her birthday but there was a problem that she does not want to serve fast food to her guests because she is very health conscious. She has 15 apples and 40 bananas at home and decided to serve them. She want to distribute fruits among guests. She does not want to discriminate among guests so she decided to distribute equally among all.

3.1 How many guests she can invite? a) 6 b) 5 c) 3 d) 4

3.2 How many apples and bananas will each guest get?

3.3 If a guest claims that he got the highest no of fruits amongst all, is this situation possible? If yes, what will be the number of fruits that person got?

3.4 If the number of guests double then is it possible to distribute the fruits equally?

4 An online shopping website sells 10 types of items which are packed into various sizes of cartons which are given below. Carton type Inner Dimensions (l x b) cm<sup>2</sup> Small 6X8 Medium 12X24 Large 24X 36 Extra large 36 X 48 XXL 48 X 96 The company places supporting thermocol sheets inside every package along the edges. The company thought of procuring same sized sheets for all types of cartons. 4.1 What should be the maximum size of the sheet that fits into all type of cartons? 4.2 How many such sheet sizes are possible?

4.3 The company later introduced a new size of carton called semi large whose measurements are 14 X 15. Whether the existing maximum size sheet fits this shape?

4.4 What should have been the size of the semi large carton (which is larger than medium carton but smaller than large carton) so that the maximum sized sheet remains same?

5 On a bright Sunday morning three friends A, B and C decided to go on river for fishing and boating. They decided to leave for the place together in the evening. The journey was

	<p>smooth, it just went as scheduled then they reached to the river, and started to set the boat on sail. They were enjoying their ride with full speed. They started boating from a place to another place which is at a distance of 42 km and then again returns to the starting place. They took 20 hours in all. The time taken by them riding downstream in going 14 km is equal to the time taken by them riding upstream in going 6 km.</p> <p>5.1 Form the pair of linear equations in two variables from this situation.</p> <p>6 Two teachers A and B went to a 'Sale' to purchase geometry box and notebooks for the prize distribution in Mathematics Quiz which will be organized next week in the school. The number of geometry box is one less than the number of notebooks purchased. Also, the three times number of geometry box is 12 less than two times the number of notebooks purchased".</p> <p>6.1 Form the pair of linear equations in two variables from this situation.</p> <p>6.2 Draw the graphs of the above equations.</p>
<p style="text-align: center;"><b>SCIENCE</b></p>	<p>I Complete practical file  II Make notes of our environment chapter.  III Solve these questions in hw notebook</p> <p>1. In the equations given below, state giving reasons, whether substances have been oxidised or reduced.  (i) <math>\text{PbO} + \text{CO} \rightarrow \text{Pb} + \text{CO}_2</math> (ii) <math>\text{H}_2\text{S} + \text{Cl}_2 \rightarrow 2\text{HCl} + \text{S}</math>.</p> <p>2. What are the characteristics of chemical reactions?</p> <p>3. What happens when an aqueous solution of sodium sulphate reacts with an aqueous solution of barium chloride? State the physical conditions of reactants in which the reaction between them will not take place. Write the balanced chemical equation for the reaction and name the type of reaction.</p> <p>4. <math>\text{AgNO}_3(\text{aq}) + \text{NaCl}(\text{aq}) \rightarrow \text{AgCl}(\text{s}) + \text{NaNO}_3(\text{aq})</math>  <math>\text{FeS} + \text{H}_2\text{SO}_4 \rightarrow \text{FeSO}_4 + \text{H}_2\text{S}</math></p> <p>Consider the above mentioned two chemical equations with two different kinds of arrows (<math>\uparrow</math> and <math>\downarrow</math>) along with product. What do these two different arrows indicate?</p> <p>5. Balance the following chemical equations. <math>(\text{PbNO}_3)_2 \rightarrow \text{PbO} + \text{NO}_2 + \text{O}_2</math></p> <p>6. Assertion (A) : Following is a balanced chemical equation for the action of steam on iron :  <math>3\text{Fe} + 4\text{H}_2\text{O} \rightarrow \text{Fe}_3\text{O}_4 + 4\text{H}_2</math>  Reason (R): The law of conservation of mass holds good for a chemical equation.</p> <p>(a) Both (A) and (R) are true and reason (R) is the correct explanation of the assertion (A)  (b) Both (A) and (R) are true, but reason (R) is not the correct explanation of the assertion (A).  (c) (A) is true, but (R) is false.  (d) (A) is false, but (R) is true.</p> <p>7. Write balanced chemical equations for the following chemical reactions:  (a) Hydrogen + Chlorine <math>\rightarrow</math> Hydrogen chloride  (b) Lead + Copper chloride <math>\rightarrow</math> Lead chloride + Copper  (c) Zinc oxide + Carbon <math>\rightarrow</math> Zinc + Carbon monoxide</p> <p>8. Mention with reason the colour changes observe when:  (i) silver chloride is exposed to sunlight.  (ii) copper powder is strongly heated in the presence of oxygen.  (iii) a piece of zinc is dropped in copper sulphate solution.</p>

<p style="text-align: center;"><b>SOCIAL SCIENCE</b></p>	<p>PROJECT WORK(any one)(A4 Size Sheet 15-20 Pages)</p> <p>i)Consumer Rights ii)Social Issues (Unemployment or Poverty) iii)Sustainable Development</p> <p>QUESTION &amp; ANSWERS</p> <p>i)CH 1, History, Rise Of Nationalism In Europe ii)CH1,Economy, Developments</p>
<p style="text-align: center;"><b>COMPUTER SCIENCE</b></p>	<ol style="list-style-type: none"> <li>1. APPLICATIONS OF AI IN DAILY LIFE</li> <li>2. DOMAINS OF AI</li> <li>3. SUSTAINABLE DEVOLPMENT GOALS</li> <li>4. DIFF BETWEEN RULE BASED AND LEARNING BASED AI APPROCHES</li> <li>5. DIFF BETWEEN SUPERVISED AND UNSUPERVISED AND REINFORCEMENT LEARNING MODELS</li> <li>6. DIFF BETWEEN SCRIPT BOARDS AND SMART BOARDS</li> <li>7. EVOLUTION OF COMPUTERS</li> </ol>

ENGLISH	<p><b>1. Portfolio</b></p> <p><b>2. Framing 20 MCQs from the lessons:</b></p> <p><b>A Letter to God</b></p> <p><b>A Triumph of Surgery</b></p> <p><b>Dust of Snow</b></p> <p><b>Fire and Ice</b></p> <p><b>3. MDP</b></p> <p><b>Topic: Inspirational Leaders</b></p> <p><b>( Biography of any five inspirational leaders with pictures- their struggles, contributions and achievements to be highlighted , should include world, Indian as well as regional leaders)</b></p> <p><b>(10 to 12 pages)</b></p>
HINDI	<p>प्रश्न 1. पत्र- लेखन</p> <p>1. अपने क्षेत्र में पार्क विकसित कराने के लिए नगर निगम अधिकारी को पत्र लिखिए।</p> <p>2. अपने मित्र को प्रातःकालीन भ्रमण और योग का महत्व बताते हुए एक प्रेरणा पत्र लिखिए।</p> <p>प्रश्न 2. अनुच्छेद लेखन</p> <p>- प्रदूषण -कारण और निवारण</p> <p>-इंटरनेट का महत्व</p> <p>प्रश्न 3. रचना के आधार पर वाक्य भेद उदाहरण सहित लिखिए।</p> <p>प्रश्न 4. पढ़ाए गए पाठों के प्रश्न उत्तर याद करने हैं।</p> <p>प्रश्न 5. नेताजी सुभाष चंद्र बोस के व्यक्तित्व और कृतित्व पर एक प्रोजेक्ट बनाइए।</p> <p>प्रश्न 6. संज्ञा, सर्वनाम, विशेषण, क्रिया, क्रियाविशेषण को उदाहरण सहित लिखिए।</p>
MATHS	<p>Solve the following questions in your class work</p> <p>1. Find the HCF and LCM of 612 and 1314 using prime factorisation method.</p> <p>2. Find the HCF and LCM of 108, 120 and 252 using prime factorisation method.</p> <p>3. Find the largest number which divides 245 and 1037, leaving remainder 5 in each case.</p> <p>4. Find the least number which when divided by 35, 56 and 91 leaves the same remainder 7 in each case.</p> <p>5. Find the smallest number which when divided by 28 and 32 leaves remainders 8 and 12 respectively.</p> <p>6. Find the greatest number of four digits which is exactly divisible by 15, 24 and 36.</p> <p>7. Find the least number which should be added to 2497 so that the sum is exactly divisible by 5, 6, 4 and 3</p> <p>8. Find the greatest possible length which can be used to measure exactly the lengths 7 m, 3 m 85 cm and 12 m 95 cm.</p> <p>9. Three measuring rods are 64 cm, 80 cm and 96 cm in length. Find the least length of cloth that can be measured an exact number of times, using any of the rods.</p> <p>10. Prove that <math>\sqrt{5}</math> is irrational.</p> <p>11. Prove that <math>(\sqrt{2}+\sqrt{3})</math> is irrational.</p>

	<p>12. Prove that <math>4-5\sqrt{2}</math> is an irrational number.</p> <p>13. Find the zeros of the polynomial <math>6x^2 - 3 - 7x</math> and verify the relationship between the zeros and the coefficients.</p> <p>14. Obtain the zeros of the quadratic polynomial <math>3x^2 - 8x + 4\sqrt{3}</math> and verify the relation between its zeros and coefficients.</p> <p>15. If the product of the zeros of the polynomial <math>(ax^2 - 6x - 6)</math> is 4, find the value of a.</p> <p>16. If one zero of the polynomial <math>(a^2 + 9)x^2 + 13x + 6a</math> is reciprocal of the other, find the value of a.</p> <p>17. Solve graphically the system of linear equations <math>4x - 5y + 16 = 0</math> and <math>2x + y - 6 = 0</math>. Determine the vertices of the triangle formed by these lines and the x-axis.</p> <p>18. Solve the following system of linear equations graphically: <math>4x - 5y - 20 = 0</math> and <math>3x + 5y - 15 = 0</math>. Determine the vertices of the triangle formed by the lines representing the above equations and the y-axis.</p>
<p style="text-align: center;"><b>SCIENCE</b></p>	<p>I Complete practical file</p> <p>II Make notes of our environment chapter.</p> <p>III Solve these questions in hw notebook</p> <p>1. In the equations given below, state giving reasons, whether substances have been oxidised or reduced.</p> <p>(i) <math>PbO + CO \rightarrow Pb + CO_2</math></p> <p>(ii) <math>H_2S + Cl_2 \rightarrow 2HCl + S</math>.</p> <p>2. What are the characteristics of chemical reactions?</p> <p>3. What happens when an aqueous solution of sodium sulphate reacts with an aqueous solution of barium chloride? State the physical conditions of reactants in which the reaction between them will not take place. Write the balanced chemical equation for the reaction and name the type of reaction.</p> <p>4. <math>AgNO_3(aq) + NaCl(aq) \rightarrow AgCl(s) \downarrow + NaNO_3(aq)</math>  <math>FeS + H_2SO_4 \rightarrow FeSO_4 + H_2S \uparrow</math></p> <p>Consider the above mentioned two chemical equations with two different kinds of arrows (<math>\uparrow</math> and <math>\downarrow</math>) along with product. What do these two different arrows indicate?</p> <p>5. Balance the following chemical equations.</p> <p><math>(PbNO_3)_2 \rightarrow PbO + NO_2 + O_2</math></p> <p>6. Assertion (A) : Following is a balanced chemical equation for the action of steam on iron  <math>3Fe + 4H_2O \rightarrow Fe_3O_4 + 4H_2</math>  Reason (R): The law of conservation of mass holds good for a chemical equation.</p> <p>(a) Both (A) and (R) are true and reason (R) is the correct explanation of the assertion (A)</p> <p>(b) Both (A) and (R) are true, but reason (R) is not the correct explanation of the assertion (A).</p> <p>(c) (A) is true, but (R) is false.</p> <p>(d) (A) is false, but (R) is true.</p> <p>7. Write balanced chemical equations for the following chemical reactions:</p> <p>(a) Hydrogen + Chlorine <math>\rightarrow</math> Hydrogen chloride</p> <p>(b) Lead + Copper chloride <math>\rightarrow</math> Lead chloride + Copper</p> <p>(c) Zinc oxide + Carbon <math>\rightarrow</math> Zinc + Carbon monoxide</p> <p>8. Mention with reason the colour changes observe when:</p> <p>(i) silver chloride is exposed to sunlight.</p> <p>(ii) copper powder is strongly heated in the presence of oxygen.</p> <p>(iii) a piece of zinc is dropped in copper sulphate solution.</p>

<p><b>SOCIAL SCIENCE</b></p>	<p>SST HOME WORK  PART-1  1.RISE OF NATIONALISM IN EUROPE.  2. DEVELOPMENT- TEST BOOK SOLUTIONS  PART-2  PROJECT WORK:  1.CONSUMER RIGHTS.  1. SOCIAL ISSUES ( UNEMPLOYMENT, POVERTY and GENDER DISCRIMINATION)  3. SUSTAINABLE DEVELOPMENT.  any one of the above for project ( minimum 15 pages includes images paintings relevant to topic)</p>
<p><b>COMPUTER SCIENCE</b></p>	<p>1. APPLICATIONS OF AI IN DAILY LIFE  2. DOMAINS OF AI  3. SUSTAINABLE DEVELOPMENT GOALS  4. DIFFBETWEENRULEBASEDANDLEARNINGBASEDAIAPPROCHES  5.DIFF BETWEEN SUPERVISED AND UNSUPERVISED AND REINFORCEMENT LEARNING MODELS  6. DIFFBETWEENSRIPTBOARDSANDSMARTBOARDS  7. EVOLUTION OF COMPUTERS  MAKE A CHART</p>

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<b>HINDI</b>	<p><b>प्रश्न 1. पत्र- लेखन</b></p> <ol style="list-style-type: none"><li>1. अपने क्षेत्र में पार्क विविध रंगों के लिए नगर वनगम अविरोधी पत्र लिखिए।</li><li>2. अपने वृत्त में प्रातः कीर्तन भ्रमण और योग का महत्व बताते हुए एक प्रेरणा पत्र लिखिए।</li></ol> <p><b>प्रश्न 2. अनुच्छेद लेखन</b></p> <ul style="list-style-type: none"><li>- प्रदूषण - कारण और वनारण</li><li>- इंटरनेट का महत्व</li></ul> <p><b>प्रश्न 3. रचना के आधार पर वाक्य भेद उदाहरण सहित लिखिए।</b></p> <p><b>प्रश्न 4. पढ़ाए गए पाठों के प्रश्न उत्तर याद रखें। प्रश्न 5. नेताजी सुभाष चंद्र बोस के व्यक्तित्व और व्यक्तित्व पर एक प्रोजेक्ट बनाइए।</b></p> <p><b>प्रश्न 6. जिज्ञा, विक्रम, विशेषण, विया, वियाविशेषण का उदाहरण सहित लिखिए।</b></p>



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<b>MATHS</b>	<ol style="list-style-type: none"> <li>1. This assignment should be done on a separate ruled sheet.</li> <li>2. A cover page with the heading <a href="#">MATHS HOLIDAY HOMEWORK</a> should be attached on the top.</li> <li>3. Illustrate your answer by giving suitable examples/graphs/charts/figures/tables/diagrams wherever necessary.</li> <li>4. Assignment should be clear, readable, and well presented.</li> </ol>	
<b>S N O</b>	<b>QUESTION</b>	
<b>1</b>	<p>Sundaram joined a company for a fixed salary per month. After few months management felt happy with his work and multiplied his salary by some n ti This happened every few months and his salary kept getting multiplied an reached a salary of 36 K. Every time the management increased the salary prime number of times only and his initial salary was 5 K</p> <p>1.1 How many times management did give incentive to Sundaram? 1.2 What is the maximum increment he got in his salary?</p> <p>1.3 What is the least incentive he got? What would be his salary had he got the same type of increment every time?</p> <p>1.4 Had his first salary <u>been</u> 9 K what would be his present Salary?</p>	

	2	<p>Nobita, Zian and Suzuko are playing a game. Nobita climbs 5 stairs and gets down 2 stairs in one turn. Zian goes up by 7 stairs and comes down by 2 stairs every 10 stairs. Suzuko goes 10 stairs up and 3 stairs down each time. Doing this they have to reach to the nearest point of 100<sup>th</sup> stairs and they will stop once they find it impossible to go forward. (They have less number of stairs than required forward stairs).</p> <p>2.1 Who reaches the nearest point?  a) Nobita b) Zian c) Suzuko d) All together reach to the nearest point</p> <p>2.2 How many times can they meet in between on same step? 2.3 What is the first stair where any two out of three will meet together?</p> <p>2.4 Who takes least number of steps to reach near hundred.  a) Nobita b) Zian c) Suzuko d) All take equal steps.</p>	
	3.	<p>A woman wants to organize her birthday party. She was happy on her birthday but there was a problem that she does not want to serve fast food to her guests because she is very health conscious. She has 15 apples and 40 bananas at home and decided to serve them. She wants to distribute fruits among guests. She does not want to discriminate among guests so she decided to distribute equally among all.</p> <p>3.1 How many guests she can invite?  a) 6 b) 5 c) 3 d) 4</p> <p>3.2 How many apples and bananas will each guest get?</p> <p>3.3 If a guest claims that he got the highest no of fruits amongst all, is this situation</p>	

		<p>possible? If yes, what will be the number of fruits that person got? 3.4 If the number of guests double then is it possible to distribute the fruits equally?</p>	
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4	<p>An online shopping website sells 10 types of items which are packed in various sizes of cartons which are given below.</p> <p>Carton type Inner Dimensions (l x b)cm<sup>2</sup></p> <p>Small 6X8 Medium 12X24 Large 24X 36 Extra large 36 X 48 XXL 48 X 96</p> <p>The company places supporting thermocol sheets inside every package along the edges. The company thought of procuring same sized sheets for all types of cartons.</p> <p>4.1 What should be the maximum size of the sheet that fits into all type of cartons? 4.2 How many such sheet sizes are possible? 4.3 The company later introduced a new size of carton called semi large whose measurements are 14 X 15. Whether the existing maximum size sheet fits its shape? 4.4 What should have been the size of the semi large carton (which is larger than medium carton but smaller than large carton) so that the maximum sized sheet remains same?</p>	
5	<p>On a bright Sunday morning three friends A, B and C decided to go on river for fishing and boating. They decided to leave for the place together in the evening. The journey was smooth, it just went as scheduled then they reached to the river, and started set the boat on sail. They were enjoying their ride with full speed. They started boating from a place to another place which is at a distance of 42 km and then again returned to the starting place. They took 20 hours in all. The time taken by them riding downstream in going 14 km is equal to the time taken by them riding upstream going 6 km.</p> <p>5.1 Form the pair of linear equations in two variables from this situation.</p>	
6	<p>Two teachers A and B went to a 'Sale' to purchase geometry box and notebook for the prize distribution in Mathematics Quiz which will be organized next week in school. The number of geometry box is one less than the number of notebook purchased. Also, the three times number of geometry box is 12 less than two times the number of notebooks purchased".</p> <p>6.1 Form the pair of linear equations in two variables from this situation. 6.2 Draw the graphs of the above equations.</p>	

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<p><b>SCIENCE</b></p>	<p>I Complete practical file  II Make notes of our environment chapter.  III Solve these questions in hw notebook</p> <p>1) In the equations given below, state giving reasons, whether substances have been oxidised or reduced.  (i) <math>\text{PbO} + \text{CO} \rightarrow \text{Pb} + \text{CO}_2</math> (ii) <math>\text{H}_2\text{S} + \text{Cl}_2 \rightarrow 2\text{HCl} + \text{S}</math>.</p> <p>2) What are the characteristics of chemical reactions?</p> <p>3) What happens when an aqueous solution of sodium sulphate reacts with an aqueous solution of barium chloride? State the physical conditions of reactants in which the reaction between them will not take place. Write the balanced chemical equation for the reaction and name the type of reaction.</p> <p>4) <math>\text{AgNO}_3(\text{aq}) + \text{NaCl}(\text{aq}) \longrightarrow \text{AgCl}(\text{s})\downarrow + \text{NaNO}_3(\text{aq})</math> <math>\text{FeS} + \text{H}_2\text{SO}_4 \longrightarrow \text{FeSO}_4 + \text{H}_2\text{S}\uparrow</math>  Consider the above mentioned two chemical equations with two different kinds of arrows (<math>\uparrow</math> and <math>\downarrow</math>) along with product. What do these two different arrows indicate?</p> <p>5) Balance the following chemical equations. <math>(\text{PbNO}_3)_2 \rightarrow \text{PbO} + \text{NO}_2 + \text{O}_2</math></p> <p>6) Assertion (A) : Following is a balanced chemical equation for the action of steam on iron : <math>3\text{Fe} + 4\text{H}_2\text{O} \rightarrow \text{Fe}_3\text{O}_4 + 4\text{H}_2</math> Reason (R): The law of conservation of mass holds good for a chemical equation. (a) Both (A) and (R) are true and reason (R) is the correct explanation of the assertion (A) (b) Both (A) and (R) are true, but reason (R) is not the correct explanation of the assertion (A). (c) (A) is true, but (R) is false. (d) (A) is false, but (R) is true</p> <p>7) Write balanced chemical equations for the following chemical reactions: (a) Hydrogen + Chlorine <math>\rightarrow</math> Hydrogen chloride (b) Lead + Copper chloride <math>\rightarrow</math> Lead chloride + Copper (c) Zinc oxide + Carbon <math>\rightarrow</math> Zinc + Carbon monoxide</p> <p>8) Mention with reason the colour changes observe when:  (i) silver chloride is exposed to sunlight.  (ii) copper powder is strongly heated in the presence of oxygen.  (iii) a piece of zinc is dropped in copper sulphate solution.</p>
<p><b>SOCIAL SCIENCE</b></p>	<p>Nationalism in Europe (Project work)</p> <p>Development chapter write questions with answers (Economics)</p>



<p><b>ENGLISH</b></p>	<p>1. Portfolio</p> <p>2. Framing 20 MCQs from the lessons: A Letter to God A Triumph of Surgery Dust of Snow Fire and Ice</p> <p>3. MDP Topic: Inspirational Leaders ( Biography of any five inspirational leaders with pictures- their struggles, contributions and achievements to be highlighted , should include world, Indian as well as regional leaders) (10 to 12 pages)</p>
<p><b>SANSKRIT</b></p>	<p>ग्रीष्मावकाशस्य गृहकार्यमर्थं कक्षा-दशमी १.150 कठिनसंस्कृतशब्दाःसंग्रहय तेषां अर्थं च लिखत। २.अननुासिकसन्धेः : परिचयः लिखत। ३.'मचु'धातोः पञ्च लकारेषु(लट् , लोट्, लृट्, लङ्, विधिर्लिङ्) रूपाणि लिखित्वा वाक्यप्रयोगं कुर्वन्व तां परि योजना कार्यमर्थं ४.'शचिचिपर्यावरणम्' इति पद्यं स्वीकृत्य चित्राणि रचयित्वा हिन्दीभाषायां वर्णयन्त।</p>
<p><b>MATHS</b></p>	<p>GENERAL INSTRUCTIONS:</p> <p>1. This assignment should be done on a separate ruled sheet.</p> <p>2. A cover page with the heading MATHS HOLIDAY HOMEWORK should be attached on the top.</p> <p>3. Illustrate your answer by giving suitable examples/graphs/charts/figures/tables/diagrams wherever necessary.</p> <p>4. Assignment should be clear, readable, and well presented.</p> <p>1 Sundaram joined a company for a fixed salary per month. After few months, the management felt happy with his work and multiplied his salary by some n times. This happened every few months and his salary kept getting multiplied and he reached a salary of 36 K. Every time the management increased the salary by a prime number of times only and his initial salary was 5 K</p> <p>1.1 How many times management did give incentive to Sundaram? 1.2 What is the maximum increment he got in his salary? 1.3 What is the least incentive he got? What would be his salary had he got the same type of increment every time? 1.4 Had his first salary been 9 K what would be his present Salary?</p> <p>2 Nobita, Zian and Suzuko are playing a game. Nobita climbs 5 stairs and gets down 2 stairs in one turn. Zian goes up by 7 stairs and comes down by 2 stairs every time.</p>

Suzuko goes 10 stairs up and 3 stairs down each time. Doing this they have to reach to the nearest point of 100th stairs and they will stop once they find it impossible to go forward. (They have less number of stairs than required forward stairs). 2.1 Who reaches the nearest point?

a) Nobita b) Zian c) Suzuko d) All together reach to the nearest point

2.2 How many times can they meet in between on same step?

2.3 What is the first stair where any two out of three will meet

together? 2.4 Who takes least number of steps to reach near hundred.

a) Nobita b) Zian c) Suzuko d) All take equal steps.

3. A woman wants to organize her birthday party. She was happy on her birthday but there was a problem that she does not want to serve fast food to her guests because she is very health conscious. She has 15 apples and 40 bananas at home and decided to serve them. She want to distribute fruits among guests. She does not want to

discriminate among guests so she decided to distribute equally among all. 3.1 How many guests she can invite?

a) 6 b) 5 c) 3 d) 4

3.2 How many apples and bananas will each guest get?

3.3 If a guest claims that he got the highest no of fruits amongst all, is this situation possible? If yes, what will be the number of fruits that person got?

3.4 If the number of guests double then is it possible to distribute the fruits equally?

4 An online shopping website sells 10 types of items which are packed into various sizes of cartons which are given below.

Carton type Inner Dimensions (l x b) cm<sup>2</sup>

Small 6X8

Medium 12X24

Large 24X 36

Extra large 36 X 48

XXL 48 X 96

The company places supporting thermocol sheets inside every package along the edges. The company thought of procuring same sized sheets for all types of cartons. 4.1 What should be the maximum size of the sheet that fits into all type of cartons?

4.2 How many such sheet sizes are possible?

4.3 The company later introduced a new size of carton called semi large whose measurements are 14 X 15. Whether the existing maximum size sheet fits this shape?

4.4 What should have been the size of the semi large carton (which is larger than medium carton but smaller than large carton) so that the maximum sized sheet remains same?

5 On a bright Sunday morning three friends A, B and C decided to go on river for fishing and boating. They decided to leave for the place together in the evening. The journey was smooth, it just went as scheduled then they reached to the river, and started to set the boat on sail. They were enjoying their ride with full speed. They started boating from a place to another place which is at a distance of 42 km and then again returns to the starting place. They took 20 hours in all. The time taken by them riding downstream in going 14 km is equal to the time taken by them riding upstream in going 6 km.

5.1 Form the pair of linear equations in two variables from this situation.

6. Two teachers A and B went to a 'Sale' to purchase geometry box and notebooks for the prize distribution in Mathematics Quiz which will be organized next week in

the school. The number of geometry box is one less than the number of notebooks purchased. Also, the three times number of geometry box is 12 less than two times

the number of notebooks purchased".  
6.1 Form the pair of linear equations in two variables from this situation. 6.2 Draw the graphs of the above equations.

**SCIENCE**

I Complete practical file  
II Make notes of our environment chapter.  
III Solve these questions in hw notebook

- In the equations given below, state giving reasons, whether substances have been oxidised or reduced.
  - $\text{PbO} + \text{CO} \rightarrow \text{Pb} + \text{CO}_2$
  - $\text{H}_2\text{S} + \text{Cl}_2 \rightarrow 2\text{HCl} + \text{S}$ .
- What are the characteristics of chemical reactions?
- What happens when an aqueous solution of sodium sulphate reacts with an aqueous solution of barium chloride? State the physical conditions of reactants in which the reaction between them will not take place. Write the balanced chemical equation for the reaction and name the type of reaction.
 
$$4. \text{AgNO}_3(\text{aq}) + \text{NaCl}(\text{aq}) \longrightarrow \text{AgCl}(\text{s}) \downarrow + \text{NaNO}_3(\text{aq})$$

$$\text{FeS} + \text{H}_2\text{SO}_4 \longrightarrow \text{FeSO}_4 + \text{H}_2\text{S} \uparrow$$

Consider the above mentioned two chemical equations with two different kinds of arrows (  $\uparrow$  and  $\downarrow$  ) along with product. What do these two different arrows indicate?
- Balance the following chemical equations.
 
$$(\text{PbNO}_3)_2 \rightarrow \text{PbO} + \text{NO}_2 + \text{O}_2$$
- Assertion (A) : Following is a balanced chemical equation for the action of steam on iron
 
$$: 3\text{Fe} + 4\text{H}_2\text{O} \rightarrow \text{Fe}_3\text{O}_4 + 4\text{H}_2$$

Reason (R): The law of conservation of mass holds good for a chemical equation.

  - Both (A) and (R) are true and reason (R) is the correct explanation of the assertion (A)
  - Both (A) and (R) are true, but reason (R) is not the correct explanation of the assertion (A).
  - (A) is true, but (R) is false.
  - (A) is false, but (R) is true.
- Write balanced chemical equations for the following chemical reactions:
  - Hydrogen + Chlorine  $\rightarrow$  Hydrogen chloride
  - Lead + Copper chloride  $\rightarrow$  Lead chloride + Copper
  - Zinc oxide + Carbon  $\rightarrow$  Zinc + Carbon monoxide
- Mention with reason the colour changes observe when:
  - silver chloride is exposed to sunlight.
  - copper powder is strongly heated in the presence of oxygen.



(iii) a piece of zinc is dropped in copper sulphate solution.

<b>SOCIAL SCIENCE</b>	Project work Topic: Sustainable development Pages: 10 to 15 pages
<b>COMPUTER SCIENCE</b>	<b>1. APPLICATIONS OF AI IN DAILY LIFE</b> <b>2. DOMAINS OF AI</b> <b>3. SUSTAINABLE DEVELOPMENT GOALS</b> <b>4. DIFF BETWEEN RULE BASED AND LEARNING BASED AI APPROCHES</b> <b>5. DIFF BETWEEN SUPERVISED AND UNSUPERVISED AND REINFORCEMENT LEARNING MODELS</b> <b>6. DIFF BETWEEN SCRIPTBOARDS AND SMARTBOARDS</b> <b>7. EVOLUTION OF COMPUTERS</b> <b>MAKE A CHART</b>

**KENDRIYA VIDYALAYA MEG & CENTRE, BANGALORE**

**SUMMER VACATION HOLIDAY HOMEWORK 2023**

**CLASS XIIA**

**ENGLISH**

1. Read novels and story books to spend time qualitatively during summer vacation and prepare book reviews to be presented in the class. (At least any two). For Reference: 'The Invisible Man' by H G Wells, 'The Tale of Two Cities' by Charles Dickens, 'Pride and Prejudice' by Jane Austen, 'The Harry Potter Series' by J K Rowling, 'Malgudi Days- Swami & Friends' by R K Narayan.
2. Choose one of the topics for English project work, research, gather information, do surveys wherever necessary and work on it. Be creative, maintain originality and authenticity. A list of projects will be shared with you.
3. Watch some qualitative programs on television like National Geo, Discovery, BBC etc., debate and discussions, read newspaper particularly 'The Hindu' and 'The Indian Express' daily to enhance your vocabulary and improve speaking skills.
4. Answer the following questions in your homework notebook using appropriate format and specifications as given in the class:

**Comprehension Passage**

Read two comprehension passages and based on your understanding of the passages, write answer to the questions given. (The passages will be shared with you.)

**Notice Writing**

i. The 'Literary Society' of Glory Public School is setting up a Creative Writing Club to encourage and develop the habit of creative writing. Draft a notice in 50 words for the school notice board, inviting students from classes VI-X to join the Writer's Society. The members would be expected to stay back after school for 2 hours once a week. Mention day, date, time and venue. You are Ragini/ Rakesh, President of the Society.

(ii) Draft a notice in about 50 words, urging students of classes IX and XI to participate in a three-week leadership camp to be held in your school. Mention day, date, time and venue of the camp. You are Rita/Kailash, President, Student Council.

**Letter to the Editor**

(iii) The newspapers today have full page advertisements promoting luxury items. With increase in consumerism, people find it difficult to resist and soon find themselves trapped in a world of social one-upmanship. Write a letter to the editor of a national daily expressing your views on the consequences of this consumerism giving suggestions on how to control this habit. You are Renu/ Rajan.

**Article Writing**

(iv) You are Nishi/ Nishant, a social worker, you feel that progress and advancement of India can be enhanced by educating the girl child. You believe that financial independence of girls is essential to lead a productive and respectable life in the society. Educated girls only can take decision about their

bright future as well as for the betterment of their families. You decide to write an article in about 120-150 words to be published in a local newspaper expressing your views.

Summer Vacations Homework – English Core – May & June 2023

A) Work to be done in English Notebook:

1. Read English Newspaper daily. Either The Hindu or Indian Express. Write only two words with their meanings & pronunciations daily in your English notebook. Write date-wise.

2. Write short notes in 60 to 80 words on each of the following in your English notebook with reference to the chapters mentioned:

a) Linguistic chauvinism (The last Lesson),

b) A daughter's thoughts about her ageing parents (My Mother at Sixty-Six)

c) The impact of child labour on children & society (Lost Spring),

d) The tendency to escape from the anxiety of modern life (The Third Level)

e) Conceit & arrogance of those in power (The Tiger King).

3. Solve the Reading Comprehension Passages to be sent in English Group in the third week of May. Write answers in your English Notebook.

4. Read any one of the following books & write its book review in about 80 words:

Animal Farm by George Orwell, The Catcher in the Rye by J. D. Salinger, Holes by Louis Sachar, To Kill a Mockingbird by Harper Lee, The Book Thief by Markus Zusak, 1984 by George Orwell, Feluda Series by Satyajit Ray, The Perks of Being a Wallflower by Stephen Chbosky, The Giver by Lois Lowry, A Wrinkle in Time by Madeleine L'Engle, Little Women by Louisa May Alcott, A Wizard of Earthsea by Ursula K. Le Guin, Persepolis by Marjane Satrapi, Me and Earl and the Dying Girl by Jesse Andrews, Anne of Green Gables by L M Montgomery.

5. Watch any one of the following movies & write a movie review in 80 words in Your English Notebook:

Good Will Hunting (1997), Dead Poets Society (1989), Back to the Future (1985), Whiplash (2014), Ferris Bueller's Day Off (1986), Life of Pi (2012), Stand by Me (1986), Life is Beautiful (1997), The Boy in the Striped Pyjamas (2008), A Beautiful Mind (2001), Into the Wild (2007), E.T. the Extra Terrestrial (1982), The Karate Kid (1984), Inside Out (2015), Spirited Away (2001), The Princess Bride (1987), Paddington (2015), The Pursuit of Happiness (2006), Whale Rider (2002), Up (2009).

6. Explore the music of the following musical bands/artists & write an 80-word article on any one band/artist out of these greats: The Beatles, Queen, The Rolling Stones, Led Zeppelin, Pink Floyd, Nirvana, Radiohead, The Who, The Doors, The Beach Boys, Bob Dylan, Stevie Wonder, Jimi Hendrix, Prince, Al Green, Marvin Gaye, Whitney Houston.

B) Work for learning, exploration & growth. Not to be written in English notebook:

7. Study the following topics for the Monthly Test to be held in the last week of June:

The Last Lesson, Lost Spring, The Third Level, The Tiger King, My Mother at Sixty-six, Notice Writing,

Formal & Informal Invitations & Replies.

8. Read all the chapters & poems in your syllabus at least once. From NCERT textbooks. Complete texts.

9. Stay away from screens & social media as much as possible. Observe No Screen & No Social Media days every week during weekends.

10. Take care of your health. Jog, run, play daily.

11. Spend quality time with your family.

12. Learn to cook any five recipes. Try to cook once a week, at least.

13. Keep your surroundings clean & well organised.

14. Plan your holidays. Plan your days. Follow the plans rigorously.

15. Learn to sing a song in your mother tongue & translate it in English. Now sing in English with the same tune.

16. What is fake news? Find about it. Learn how to identify fake news.

17. What are logical fallacies? Find about them. Train your mind to spot various logical fallacies.

18. Listen to the following famous speeches:

‘I Have a Dream’ by Martin Luther King Junior.

‘Tryst With Destiny’ by Jawahar Lal Nehru.

19. Read the following poems:

‘If’ by Rudyard Kipling,

‘Where the Mind is Without Fear’ by Rabindranath Tagore,

‘Still, I Rise’ by Maya Angelou,

‘Rashmirathi’ by Dinkar.

20. Explore various AI tools.

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### MATHEMATICS

1.

Find  $x$ ,  $y$ ,  $z$  and  $w$  if 
$$\begin{bmatrix} x - y & 2x + z \\ 2x - y & 3x + w \end{bmatrix} = \begin{bmatrix} -1 & 5 \\ 0 & 13 \end{bmatrix}.$$

2. Construct a  $3 \times 3$  matrix  $A = [a_{ij}]$  whose elements are given by

$$a_{ij} = \begin{cases} 1+i+j & \text{if } i \geq j \\ \frac{|i-2j|}{2} & \text{if } i < j \end{cases}$$

3. Find  $A$  and  $B$  if  $2A + 3B = \begin{bmatrix} 1 & -2 & 3 \\ 2 & 0 & -1 \end{bmatrix}$  and  $A - 2B = \begin{bmatrix} 3 & 0 & 1 \\ -1 & 6 & 2 \end{bmatrix}$ .

4. Express the matrix  $\begin{bmatrix} 3 & 3 & -1 \\ -2 & -2 & 1 \\ -4 & -5 & 2 \end{bmatrix} = P + Q$  where  $P$  is a symmetric and  $Q$  is a skew-symmetric matrix.

5. Let  $A = \begin{bmatrix} 2 & -1 \\ 3 & 4 \end{bmatrix}$ ,  $B = \begin{bmatrix} 5 & 2 \\ 7 & 4 \end{bmatrix}$ ,  $C = \begin{bmatrix} 2 & 5 \\ 3 & 8 \end{bmatrix}$ , find a matrix  $D$  such that  $CD - AB = O$ .

6. Find the value of  $x$  such that  $\begin{bmatrix} 1 & x & 1 \end{bmatrix} \begin{bmatrix} 1 & 3 & 2 \\ 2 & 5 & 1 \\ 15 & 3 & 2 \end{bmatrix} \begin{bmatrix} 1 \\ 2 \\ x \end{bmatrix} = 0$

7. If  $A = \begin{bmatrix} 5 & 3 \\ 12 & 7 \end{bmatrix}$  show that  $A^2 - 12A - I = 0$ . Hence find  $A^{-1}$ .

8. Compute the inverse of the matrix.

$$A = \begin{bmatrix} 3 & -1 & 1 \\ -15 & 6 & -5 \\ 5 & -2 & 5 \end{bmatrix} \text{ and verify that } A^{-1} A = I_3.$$

9.

If the matrix  $A = \begin{bmatrix} 1 & 1 & 2 \\ 0 & 2 & -3 \\ 3 & -2 & 4 \end{bmatrix}$  and  $B^{-1} = \begin{bmatrix} 1 & 2 & 0 \\ 0 & 3 & -1 \\ 1 & 0 & 2 \end{bmatrix}$ , then

compute  $(AB)^{-1}$ .

10.

Find the matrix  $X$  for which

$$\begin{bmatrix} 3 & 2 \\ 7 & 5 \end{bmatrix} \cdot X \cdot \begin{bmatrix} -1 & 1 \\ -2 & 1 \end{bmatrix} = \begin{bmatrix} 2 & -1 \\ 0 & 4 \end{bmatrix}$$

11.

For  $A = \begin{bmatrix} 3 & 1 \\ 7 & 5 \end{bmatrix}$ , find the numbers 'x' and 'y' such that  $A^2 + xI = yA$ , hence find  $A^{-1}$ .

12.

If  $\begin{vmatrix} 2x & x+3 \\ 2(x+1) & x+1 \end{vmatrix} = \begin{vmatrix} 1 & 5 \\ 3 & 3 \end{vmatrix}$ , find 'x'.

13.

If  $X \begin{pmatrix} 1 & 2 & 3 \\ 4 & 5 & 6 \end{pmatrix} = \begin{pmatrix} -7 & -8 & -9 \\ 2 & 4 & 6 \\ 11 & 10 & 9 \end{pmatrix}$ , then find matrix  $X$ .

14.

If  $A$  and  $B$  are square matrices of order 3 such that  $|A| = -1$ ,  $|B| = 3$ , then find the value of  $|2AB|$ .

15.

Use product  $[1 \ -1 \ 2 \ 0 \ 2 \ -3 \ 3 \ -2 \ 4][ -2 \ 0 \ 1 \ 9 \ 2 \ -3 \ 6 \ 1 \ -2 ]$  to solve the system of equations:  $x - y + 2z = 1$ ;  $2y - 3z = 1$ ;  $3x - 2y + 4z = 2$ .

16.

Find the product  $[1 \ -1 \ 1 \ 2 \ 1 \ -3 \ 1 \ 1 \ 1][4 \ 2 \ 2 \ -5 \ 0 \ 5 \ 1 \ -2 \ 3]$  and use it to solve the system of equations:  $x + 2y + z = 4$ ,  $-x + y + z = 0$ ,  $x - 3y + z = 2$ .

17.

Solve using matrix method :

$$\frac{2}{x} + \frac{3}{y} + \frac{10}{z} = 4; \frac{4}{x} - \frac{6}{y} + \frac{5}{z} = 1; \frac{6}{x} + \frac{9}{y} - \frac{20}{z} = 2$$

18. **CASE STUDY1:**

A manufacture produces three stationery products Pencil, Eraser and Sharpener which he sells in two markets. Annual sales are indicated below.

<u>Market</u>	<u>Products (in numbers)</u>		
	<u>Pencil</u>	<u>Eraser</u>	<u>Sharpener</u>
<b>A</b>	10,000	2000	18,000
<b>B</b>	6000	20,000	8,000

If the unit Sale price of Pencil, Eraser and Sharpener are Rs. 2.50, Rs. 1.50 and Rs. 1.00 respectively, and unit cost of the above three commodities are Rs. 2.00, Rs. 1.00 and Rs. 0.50 respectively, then,

Based on the above information answer the following:

- Find Total revenue of market A .
- Cost incurred in market B ?
- Profit in market A and B respectively ?

19. **CASE STUDY 2:**

Manjit wants to donate a rectangular plot of land for a school in his village. When he was asked to give dimensions of the plot, he told that if its length is decreased by 50 m and breadth is increased by 50m, then its area will remain same, but if length is decreased by 10m and breadth is decreased by 20m, then its area will decrease by 5300 m<sup>2</sup>.

Based on the information given above, answer the following questions:

- considering length as x and breadth as y , write the equations depicting the above information.
- write the matrix equation representing the given information.
- How much is the area of rectangular field?

20. **CASE STUDY 3:**

A triangular flower bed is created inside a triangular garden by joining the mid points of the triangular garden. The vertices of the plot are (0,10), (10,5) and (8,20).

Based on the information given above, answer the following questions

- Find the area of the flower bed using determinant,
- Find the area of the garden ,excluding the flower bed.

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**PHYSICS**

- Define electric field intensity at a point and obtain the expression for electric field due to a single charge?
- Obtain the expression for electric field due to dipole on its axial line?

3. Derive the expression for electric field due to dipole in its equatorial line?
4. What are electric field lines? Write its properties? Draw electric field lines due to dipole?
5. State Gauss theorem and apply it to find electric field due to infinite long wire carrying charge?
6. State Gauss law and apply it to find electric field due to plane sheet carrying charge?
7. Show that dipole placed in an uniform electric field experience torque?
8. Define equi potential surface? Draw equipotential surface for dipole & uniform electric field?
9. Show that potential due to dipole on equatorial line is zero?
10. Explain the principle of parallel plate capacitor?
11. Obtain the expression for capacitance of a parallel plate capacitor?
12. Show that energy stored in a capacitor is  $\frac{1}{2} CV^2$  ?
13. Define drift velocity and derive the expression for drift velocity?
14. Define relaxation time and obtain the relation between resistivity in terms of relaxation time?
15. Numerical from NCERT exercises chapter1 & chapter 2
16. Board questions with solutions from last 5 years?
17. Investigatory project with project file and model
18. Completion of record writing 8 experiments & 6 Activities.

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## CHEMISTRY

### I. NUMERICALS BASED ON CONCENTRATION TERMS:

1. A solution of glucose (molar mass =  $180 \text{ g mol}^{-1}$ ) in water is labelled as 10% (by mass). What would be the molality and molarity of the solution ? (Density of solution =  $1.2 \text{ g mL}^{-1}$ )
2. Calculate the molality of a solution containing 20.7 g of potassium carbonate dissolved in 500 ml of solution, assume density of solution =  $1 \text{ g/ml}$
3. A solution of glucose ( $\text{C}_6\text{H}_{12}\text{O}_6$ ) in water is labelled as 10% by weight. What would be the molality of the solution ? (Molar mass of glucose =  $180 \text{ g mol}^{-1}$ )
4. Calculate the molarity and molality of a 15% solution (by weight) of sulphuric acid density  $1.020 \text{ g cm}^{-3}$  (Atomic masses H = 1, O = 16, S = 32 amu).
5. Which aqueous solution has higher concentration 1 molar or 1 molal solution of same solute?

### II. QUESTIONS BASED ON RAOULT'S LAW

1. Two liquids A and B boil at  $145^\circ\text{C}$  and  $190^\circ\text{C}$  respectively. Which of them has higher vapour pressure at  $80^\circ\text{C}$ ?



- 10 ml of liquid A was mixed with 10 ml of liquid B. The volume of the resulting solution was found to be 19.9ml what do you conclude.
- State Raoult's law for a binary solution containing volatile components.
- Calculate the vapour pressure of a mixture containing 252 g of n-pentane (molar mass = 72 g/mol) and 1400 g of n-heptane (molar mass = 100 g/mol) at 20°C. The vapour pressures of n-pentane and n-heptane are 420 mm Hg and 36 mm Hg respectively.
- Why is the vapour pressure of a solution of glucose in water lower than that of water?

### III. Numericals based on colligative properties

- An aqueous solution of glucose is made by dissolving 10 g of glucose ( $C_6H_{12}O_6$ ) in 90 g of water at 303 K. If the vapour pressure of pure water at 303 K be 32.8 mm Hg, what would be the vapour pressure of the solution?
- A solution containing 8 g of a substance in 100 g of diethyl ether boils at 36.86°C, whereas pure ether boils at 35.60°C. Determine the molecular mass of the solute (For ether  $K_b = 2.02 \text{ kg mol}^{-1}$ )
- Calculate the freezing point of a solution containing 0.520g glucose ( $C_6H_{12}O_6$ ) dissolved in 80.20 g of water. For water  $K_f = 1.86 \text{ K kg mol}^{-1}$ .
- A solution containing 15 g urea (molar mass = 60 g mol<sup>-1</sup>) per litre of solution in water has the same osmotic pressure (isotonic) as a solution of glucose (molar mass = 190 g mol<sup>-1</sup>) in water. Calculate the mass of glucose present in one litre of its solution
- 1.00 g of a non-electrolyte solute dissolved in 50 g of benzene lowered the freezing point of benzene by 0.40 K. Find the molar mass of the solute. ( $K_f$  for benzene = 5.12 K kg mol<sup>-1</sup>)
- 100 mg of a protein is dissolved in just enough water to make 10.0 mL of solution. If this solution has an osmotic pressure of 13.3 mm Hg at 25°C, what is the molar mass of the protein? ( $R = 0.0821 \text{ L atm mol}^{-1} \text{ K}^{-1}$ , 760 mm Hg = 1 atm)
- A 4% solution of sucrose is isotonic with 3% solution of an unknown organic substance. Calculate the molecular mass of unknown substance.
- Why is the elevation in b.p. of water different in following solutions? (i) 0.1 molar NaCl solution. (ii) 0.1 molar sugar solution
- Calculate the freezing point of the solution when 31 g of ethylene glycol ( $C_2H_6O_2$ ) is dissolved in 500 g of water. ( $K_f$  for water is 1.86 K kg/mol)
- Calculate the mass of the compound (molar mass = 256 g mol<sup>-1</sup>) to be dissolved in 75g of benzene to lower its freezing point by 0.48 K ( $K_f = 5.12 \text{ K kg mol}^{-1}$ )

### IV. Numericals based on van't Hoff factor

- The freezing point depression of 0.1 molal solution of benzoic acid in benzene is 0.256 K. For benzene  $k_f$  is 5.12 K kg mol<sup>-1</sup>. Calculate the value of van't Hoff factor for benzoic acid in benzene. What conclusion can you draw about the molecular state of benzoic acid in benzene.
- The freezing point of a solution containing 0.2 g of acetic acid in 20.0 g of benzene is lowered by 0.45°C, calculate: (i) the molar mass of acetic acid from this data. (ii) van't Hoff factor [For benzene,  $K_f = 5.12 \text{ K kg mol}^{-1}$ ] What conclusion can you draw from the value of van't Hoff factor obtained

3. Calculate the freezing point depression expected for 0.0711 m aqueous solution of  $\text{Na}_2\text{SO}_4$ . If this solution actually freezes at  $-0.320^\circ\text{C}$ , what would be the value of van't Hoff factor? ( $K_f$  for water is  $1.86 \text{ K kg mol}^{-1}$ ).
4. What is the freezing point of 0.4 molal solution of acetic acid in benzene in which it dimerises to the extent of 85 %? Freezing point of benzene is  $278.4\text{K}$  and its molar heat of fusion is  $10.042 \text{ KJ mol}^{-1}$ .
5. A 1.00 molal aqueous solution of trichloroacetic acid ( $\text{CCl}_3\text{COOH}$ ) is heated to its boiling point. The solution has the boiling point of  $100.8^\circ\text{C}$ . Determine the van't Hoff factor for trichloroacetic acid. ( $K_b$  for water  $0.512 \text{ K kg Mol}^{-1}$ )

### **QUESTIONS FROM ELECTROCHEMISTRY**

1. Formulate the galvanic cell in which the following reaction takes place :  
 $\text{Zn(s)} + 2\text{Ag}^+(\text{aq}) \rightarrow \text{Zn}^{2+}(\text{aq}) + 2\text{Ag(s)}$   
 State : (i) Which one of its electrodes is negatively charged. (ii) The reaction taking place at each of its electrode. (iii) The carriers of current within this cell.
2. What is the necessity to use a salt bridge in a Galvanic cell?
3. Given that the standard electrode potential ( $E^\circ$ ) of metals are :  $\text{K}^+/\text{K} = -2.93 \text{ V}$ ,  $\text{Ag}^+/\text{Ag} = 0.80 \text{ V}$ ,  $\text{Cu}^{2+}/\text{Cu} = 0.34 \text{ V}$ ,  $\text{Mg}^{2+}/\text{Mg} = -2.37 \text{ V}$ ,  $\text{Cr}^{3+}/\text{Cr} = -0.74 \text{ V}$ ,  $\text{Fe}^{2+}/\text{Fe} = -0.44 \text{ V}$ . Arrange these metals in an increasing order of their reducing power.
4. Calculate  $\Delta G^\circ$  for the reaction :  $\text{Mg(s)} + \text{Cu}^{2+}(\text{aq}) \rightarrow \text{Mg}^{2+}(\text{aq}) + \text{Cu(s)}$ , Given  $E^\circ_{\text{cell}} = +2.71 \text{ V}$ ,  $1 \text{ F} = 96500 \text{ C mol}^{-1}$ .
5. Calculate e.m.f. of the following cell at  $298 \text{ K}$   $2\text{Cr(s)} + 3\text{Fe}^{2+}(0.1\text{M}) \rightarrow 2\text{Cr}^{3+}(0.01\text{M}) + 3\text{Fe(s)}$   
 Given :  $E^\circ(\text{Cr}^{3+}|\text{Cr}) = -0.74 \text{ V}$ ,  $E^\circ(\text{Fe}^{2+}|\text{Fe}) = -0.44 \text{ V}$ .

### **BIOLOGY**

1. COMPLETE HW OF CH. SEXUAL REPRODUCTION IN PLANTS
  2. ANSWERS THE QUESTIONS GIVEN.
  3. MAKE A PROJECT ON ARTIFICIAL HYBRIDISATION ( WRITE IN HW)
  4. MAKE LABELLED DIAGRAM OF MALE REPRODUCTIVE SYSTEM, FEMALE REPRODUCTIVE SYSTEM
  5. AND OTHER DIAGRAMS OF CHAPTER HUMAN REPRODUCTION. ( IN CW) COMPLETE CLASSWORK NOTES OF CH. SEXUAL REPRODUCTION IN PLANTS.
-

## HOLIDAY HOME WORK

### CLASS XII B

#### ENGLISH

1. Read novels and story books to spend time qualitatively during summer vacation and prepare book reviews to be presented in the class. (At least any two). For Reference: 'The Invisible Man' by H G Wells, 'The Tale of Two Cities' by Charles Dickens, 'Pride and Prejudice' by Jane Austen, 'The Harry Potter Series' by J K Rowling, 'Malgudi Days- Swami & Friends' by R K Narayan.
2. Choose one of the topics for English project work, research, gather information, do surveys wherever necessary and work on it. Be creative, maintain originality and authenticity. A list of projects will be shared with you.
3. Watch some qualitative programs on television like National Geo, Discovery, BBC etc., debate and discussions, read newspaper particularly 'The Hindu' and 'The Indian Express' daily to enhance your vocabulary and improve speaking skills.

4. Answer the following questions in your homework notebook using appropriate format and specifications as given in the class:

#### Comprehension Passage

Read two comprehension passages and based on your understanding of the passages, write answer to the questions given. (The passages will be shared with you.)

#### Notice Writing

i. The 'Literary Society' of Glory Public School is setting up a Creative Writing Club to encourage and develop the habit of creative writing. Draft a notice in 50 words for the school notice board, inviting students from classes VI-X to join the Writer's Society. The members would be expected to stay back after school for 2 hours once a week. Mention day, date, time and venue. You are Ragini/ Rakesh, President of the Society.

(ii) Draft a notice in about 50 words, urging students of classes IX and XI to participate in a three-week leadership camp to be held in your school. Mention day, date, time and venue of the camp. You are Rita/Kailash, President, Student Council.

#### Letter to the Editor

(iii) The newspapers today have full page advertisements promoting luxury items. With increase in consumerism, people find it difficult to resist and soon find themselves trapped in a world of social one-upmanship. Write a letter to the editor of a national daily expressing your views on the consequences of this consumerism giving suggestions on how to control this habit. You are Renu/ Rajan.

#### Article Writing

(iv) You are Nishi/ Nishant, a social worker, you feel that progress and advancement of India can be enhanced by educating the girl child. You believe that financial independence of girls is essential to lead a productive and respectable life in the society. Educated girls only can take decision about

their bright future as well as for the betterment of their families. You decide to write an article in about 120-150 words to be published in a local newspaper expressing your views.

Summer Vacations Homework – English Core – May & June 2023

A) Work to be done in English Notebook:

1. Read English Newspaper daily. Either The Hindu or Indian Express. Write only two words with their

meanings & pronunciations daily in your English notebook. Write date-wise.

2. Write short notes in 60 to 80 words on each of the following in your English notebook with reference to the chapters mentioned:

- a) Linguistic chauvinism (The last Lesson),
- b) A daughter's thoughts about her ageing parents (My Mother at Sixty-Six)
- c) The impact of child labour on children & society (Lost Spring),
- d) The tendency to escape from the anxiety of modern life (The Third Level)
- e) Conceit & arrogance of those in power (The Tiger King).

3. Solve the Reading Comprehension Passages to be sent in English Group in the third week of May. Write answers in your English Notebook.
4. Read any one of the following books & write its book review in about 80 words:  
Animal Farm by George Orwell, The Catcher in the Rye by J. D. Salinger, Holes by Louis Sachar, To Kill a Mockingbird by Harper Lee, The Book Thief by Markus Zusak, 1984 by George Orwell, Feluda Series by Satyajit Ray, The Perks of Being a Wallflower by Stephen Chbosky, The Giver by Lois Lowry, A Wrinkle in Time by Madeleine L'Engle, Little Women by Louisa May Alcott, A Wizard of Earthsea by Ursula K. Le Guin, Persepolis by Marjane Satrapi, Me and Earl and the Dying Girl by Jesse Andrews, Anne of Green Gables by L M Montgomery.
5. Watch any one of the following movies & write a movie review in 80 words in Your English Notebook:  
Good Will Hunting (1997), Dead Poets Society (1989), Back to the Future (1985), Whiplash (2014), Ferris Bueller's Day Off (1986), Life of Pi (2012), Stand by Me (1986), Life is Beautiful (1997), The Boy in the Striped Pyjamas (2008), A Beautiful Mind (2001), Into the Wild (2007), E.T. the Extra Terrestrial (1982), The Karate Kid (1984), Inside Out (2015), Spirited Away (2001), The Princess Bride (1987), Paddington (2015), The Pursuit of Happiness (2006), Whale Rider (2002), Up (2009).
6. Explore the music of the following musical bands/artists & write an 80-word article on any one band/artist out of these greats: The Beatles, Queen, The Rolling Stones, Led Zeppelin, Pink Floyd, Nirvana, Radiohead, The Who, The Doors, The Beach Boys, Bob Dylan, Stevie Wonder, Jimi Hendrix, Prince, Al Green, Marvin Gaye, Whitney Houston.
- B) Work for learning, exploration & growth. Not to be written in English notebook:
7. Study the following topics for the Monthly Test to be held in the last week of June:  
The Last Lesson, Lost Spring, The Third Level, The Tiger King, My Mother at Sixty-six, Notice Writing, Formal & Informal Invitations & Replies.
8. Read all the chapters & poems in your syllabus at least once. From NCERT textbooks. Complete texts.
9. Stay away from screens & social media as much as possible. Observe No Screen & No Social Media days every week during weekends.
10. Take care of your health. Jog, run, play daily.
11. Spend quality time with your family.
12. Learn to cook any five recipes. Try to cook once a week, at least.
13. Keep your surroundings clean & well organised.
14. Plan your holidays. Plan your days. Follow the plans rigorously.
15. Learn to sing a song in your mother tongue & translate it in English. Now sing in English with the same tune.
16. What is fake news? Find about it. Learn how to identify fake news.
17. What are logical fallacies? Find about them. Train your mind to spot various logical fallacies.
18. Listen to the following famous speeches:  
'I Have a Dream' by Martin Luther King Junior.  
'Tryst With Destiny' by Jawahar Lal Nehru.
19. Read the following poems:  
'If' by Rudyard Kipling,  
'Where the Mind is Without Fear' by Rabindranath Tagore,  
'Still, I Rise' by Maya Angelou,  
'Rashmirathi' by Dinkar.
20. Explore various AI tools.

1. Find  $x$ ,  $y$ ,  $z$  and  $w$  if  $\begin{bmatrix} x - y & 2x + z \\ 2x - y & 3x + w \end{bmatrix} = \begin{bmatrix} -1 & 5 \\ 0 & 13 \end{bmatrix}$ .

2. Construct a  $3 \times 3$  matrix  $A = [a_{ij}]$  whose elements are given by

$$a_{ij} = \begin{cases} 1+i+j & \text{if } i \geq j \\ \frac{|i-2j|}{2} & \text{if } i < j \end{cases}$$

3. Find  $A$  and  $B$  if  $2A + 3B = \begin{bmatrix} 1 & -2 & 3 \\ 2 & 0 & -1 \end{bmatrix}$  and  $A - 2B = \begin{bmatrix} 3 & 0 & 1 \\ -1 & 6 & 2 \end{bmatrix}$ .

4. Express the matrix  $\begin{bmatrix} 3 & 3 & -1 \\ -2 & -2 & 1 \\ -4 & -5 & 2 \end{bmatrix} = P + Q$  where  $P$  is a symmetric and  $Q$

is a skew-symmetric matrix.

5. Let  $A = \begin{bmatrix} 2 & -1 \\ 3 & 4 \end{bmatrix}$ ,  $B = \begin{bmatrix} 5 & 2 \\ 7 & 4 \end{bmatrix}$ ,  $C = \begin{bmatrix} 2 & 5 \\ 3 & 8 \end{bmatrix}$ , find a matrix  $D$  such that  $CD - AB = O$ .

6. Find the value of  $x$  such that  $\begin{bmatrix} 1 & x & 1 \end{bmatrix} \begin{bmatrix} 1 & 3 & 2 \\ 2 & 5 & 1 \\ 15 & 3 & 2 \end{bmatrix} \begin{bmatrix} 1 \\ 2 \\ x \end{bmatrix} = 0$

7. If  $A = \begin{bmatrix} 5 & 3 \\ 12 & 7 \end{bmatrix}$  show that  $A^2 - 12A - I = 0$ . Hence find  $A^{-1}$ .

8. Compute the inverse of the matrix.

$$A = \begin{bmatrix} 3 & -1 & 1 \\ -15 & 6 & -5 \\ 5 & -2 & 5 \end{bmatrix} \text{ and verify that } A^{-1} A = I_3.$$

9.

If the matrix  $A = \begin{bmatrix} 1 & 1 & 2 \\ 0 & 2 & -3 \\ 3 & -2 & 4 \end{bmatrix}$  and  $B^{-1} = \begin{bmatrix} 1 & 2 & 0 \\ 0 & 3 & -1 \\ 1 & 0 & 2 \end{bmatrix}$ , then

compute  $(AB)^{-1}$ .

10.

Find the matrix  $X$  for which

$$\begin{bmatrix} 3 & 2 \\ 7 & 5 \end{bmatrix} \cdot X \cdot \begin{bmatrix} -1 & 1 \\ -2 & 1 \end{bmatrix} = \begin{bmatrix} 2 & -1 \\ 0 & 4 \end{bmatrix}$$

11.

For  $A = \begin{bmatrix} 3 & 1 \\ 7 & 5 \end{bmatrix}$ , find the numbers 'x' and 'y' such that  $A^2 + xI = yA$ , hence find  $A^{-1}$ .

12.

If  $\begin{vmatrix} 2x & x+3 \\ 2(x+1) & x+1 \end{vmatrix} = \begin{vmatrix} 1 & 5 \\ 3 & 3 \end{vmatrix}$ , find 'x'.

13.

If  $X \begin{pmatrix} 1 & 2 & 3 \\ 4 & 5 & 6 \end{pmatrix} = \begin{pmatrix} -7 & -8 & -9 \\ 2 & 4 & 6 \\ 11 & 10 & 9 \end{pmatrix}$ , then find

matrix  $X$ .

14.

If  $A$  and  $B$  are square matrices of order 3 such that  $|A| = -1$ ,  $|B| = 3$ , then find the value of  $|2AB|$ .

15.

Use product  $\begin{bmatrix} 1 & -1 & 2 \\ 0 & 2 & -3 \\ 3 & -2 & 4 \end{bmatrix} \begin{bmatrix} -2 & 0 & 1 \\ 9 & 2 & -3 \\ 6 & 1 & -2 \end{bmatrix}$  to solve the system of equations:  
 $x - y + 2z = 1$ ;  $2y - 3z = 1$ ;  $3x - 2y + 4z = 2$ .

16.

Find the product  $\begin{bmatrix} 1 & -1 & 1 \\ 2 & 1 & -3 \\ 1 & 1 & 1 \end{bmatrix} \begin{bmatrix} 4 & 2 & 2 \\ -5 & 0 & 5 \\ 1 & -2 & 3 \end{bmatrix}$  and use it to solve the system of equations:  
 $x + 2y + z = 4$ ,  $-x + y + z = 0$ ,  $x - 3y + z = 2$ .

17.

Solve using matrix method :  $\frac{2}{x} + \frac{3}{y} + \frac{10}{z} = 4$ ;  $\frac{4}{x} - \frac{6}{y} + \frac{5}{z} = 1$ ;  $\frac{6}{x} + \frac{9}{y} - \frac{20}{z} = 2$

18. **CASE STUDY1:**

A manufacture produces three stationery products Pencil, Eraser and Sharpener which he sells in two markets. Annual sales are indicated below.

<u>Market</u>	<u>Products (in numbers)</u>		
	<u>Pencil</u>	<u>Eraser</u>	<u>Sharpener</u>
<b>A</b>	<b>10,000</b>	<b>2000</b>	<b>18,000</b>
<b>B</b>	<b>6000</b>	<b>20,000</b>	<b>8,000</b>

If the unit Sale price of Pencil, Eraser and Sharpener are Rs. 2.50, Rs. 1.50 and Rs. 1.00 respectively, and unit cost of the above three commodities are Rs. 2.00, Rs. 1.00 and Rs. 0.50 respectively, then,

Based on the above information answer the following:

- Find Total revenue of market A .
- Cost incurred in market B ?
- Profit in market A and B respectively ?

19. **CASE STUDY 2:**

Manjit wants to donate a rectangular plot of land for a school in his village. When he was asked to give dimensions of the plot, he told that if its length is decreased by 50 m and breadth is increased by 50m, then its area will remain same, but if length is decreased by 10m and breadth is decreased by 20m, then its area will decrease by 5300 m<sup>2</sup>.

Based on the information given above, answer the following questions:

- considering length as x and breadth as y , write the equations depicting the above information.
- write the matrix equation representing the given information.
- How much is the area of rectangular field?

20. **CASE STUDY 3:**

A triangular flower bed is created inside a triangular garden by joining the mid points of the triangular garden. The vertices of the plot are (0,10), (10,5) and (8,20).

Based on the information given above, answer the following questions

- Find the area of the flower bed using determinant,
- Find the area of the garden ,excluding the flower bed.

**PHYSICS**

- Define electric field intensity at a point and obtain the expression for electric field due to a single charge?
- Obtain the expression for electric field due to dipole on its axial line?
- Derive the expression for electric field due to dipole in its equatorial line?
- What are electric field lines? Write its properties? Draw electric field lines due to dipole?
- State Gauss theorem and apply it to find electric field due to infinite long wire carrying charge?
- State Gauss law and apply it to find electric field due to plane sheet carrying charge?
- Show that dipole placed in an uniform electric field experience torque?
- Define equi potential surface? Draw equipotential surface for dipole & uniform electric field?
- Show that potential due to dipole on equatorial line is zero?
- Explain the principle of parallel plate capacitor?

11. Obtain the expression for capacitance of a parallel plate capacitor?
12. Show that energy stored in a capacitor is  $\frac{1}{2} CV^2$ ?
13. Define drift velocity and derive the expression for drift velocity?
14. Define relaxation time and obtain the relation between resistivity in terms of relaxation time?
15. Numerical from NCERT exercises chapter 1 & chapter 2
16. Board questions with solutions from last 5 years?
17. Investigatory project with project file and model
18. Completion of record writing 8 experiments & 6 Activities

## CHEMISTRY

### I. NUMERICALS BASED ON CONCENTRATION TERMS:

1. A solution of glucose (molar mass =  $180 \text{ g mol}^{-1}$ ) in water is labelled as 10% (by mass). What would be the molality and molarity of the solution? (Density of solution =  $1.2 \text{ g mL}^{-1}$ )
2. Calculate the molality of a solution containing 20.7 g of potassium carbonate dissolved in 500 ml of solution, assume density of solution =  $1 \text{ g/ml}$
3. A solution of glucose ( $\text{C}_6\text{H}_{12}\text{O}_6$ ) in water is labelled as 10% by weight. What would be the molality of the solution? (Molar mass of glucose =  $180 \text{ g mol}^{-1}$ )
4. Calculate the molarity and molality of a 15% solution (by weight) of sulphuric acid density  $1.020 \text{ g cm}^{-3}$  (Atomic masses H = 1, O = 16, S = 32 amu).
5. Which aqueous solution has higher concentration 1 molar or 1 molal solution of same solute?

### II. QUESTIONS BASED ON RAOULT'S LAW

1. Two liquids A and B boil at  $145^\circ\text{C}$  and  $190^\circ\text{C}$  respectively. Which of them has higher vapour pressure at  $80^\circ\text{C}$ ?
2. 10 ml of liquid A was mixed with 10 ml of liquid B. The volume of the resulting solution was found to be 19.9 ml. What do you conclude?
3. State Raoult's law for a binary solution containing volatile components.
4. Calculate the vapour pressure of a mixture containing 252 g of n-pentane (molar mass =  $72 \text{ g/mol}$ ) and 1400 g of n-heptane (molar mass =  $100 \text{ g/mol}$ ) at  $200^\circ\text{C}$ . The vapour pressures of n-heptane are 420 mm Hg and 36 mm Hg respectively.
5. Why is the vapour pressure of a solution of glucose in water lower than that of water?

### III. Numericals based on colligative properties

1. An aqueous solution of glucose is made by dissolving 10 g of glucose ( $\text{C}_6\text{H}_{12}\text{O}_6$ ) in 90 g of water at 303 K. If the vapour pressure of pure water at 303 K is 32.8 mm Hg, what would be the vapour pressure of the solution?
2. A solution containing 8 g of a substance in 100 g of diethyl ether boils at  $36.86^\circ\text{C}$ , whereas pure ether boils at  $35.60^\circ\text{C}$ . Determine the molecular mass of the solute (For ether  $K_b = 2.02 \text{ kg mol}^{-1}$ )
3. Calculate the freezing point of a solution containing 0.520 g glucose ( $\text{C}_6\text{H}_{12}\text{O}_6$ ) dissolved in 80.20 g of water. For water  $K_f = 1.86 \text{ K kg mol}^{-1}$ .
4. A solution containing 15 g urea (molar mass =  $60 \text{ g mol}^{-1}$ ) per litre of solution in water has the same osmotic pressure (isotonic) as a solution of glucose (molar mass =  $190 \text{ g mol}^{-1}$ ) in water. Calculate the mass of glucose present in one litre of its solution
5. 1.00 g of a non-electrolyte solute dissolved in 50 g of benzene lowered the freezing point of benzene by 0.40 K. Find the molar mass of the solute. ( $K_f$  for benzene =  $5.12 \text{ K kg mol}^{-1}$ )
6. 100 mg of a protein is dissolved in just enough water to make 10.0 mL of solution. If this solution has an osmotic pressure of 13.3 mm Hg at  $25^\circ\text{C}$ , what is the molar mass of the protein? ( $R = 0.0821 \text{ L atm mol}^{-1} \text{ K}^{-1}$ ,  $760 \text{ mm Hg} = 1 \text{ atm}$ )
7. A 4% solution of sucrose is isotonic with 3% solution of an unknown organic substance. Calculate the molecular mass of unknown substance.
8. Why is the elevation in b.p. of water different in following solutions? (i) 0.1 molar NaCl solution. (ii) 0.1 molar sugar solution
9. Calculate the freezing point of the solution when 31 g of ethylene glycol ( $\text{C}_2\text{H}_6\text{O}_2$ ) is dissolved in



500 g of water. (Kf for water is 1.86 K kg/mol)

10. Calculate the mass of the compound (molar mass = 256 g mol<sup>-1</sup>)

) to be dissolved in 75g of benzene

to lower its freezing point by 0.48 K (Kf = 5.12 K kg mol<sup>-1</sup>)

) IV. Numericals based on van't Hoff factor

1. The freezing point depression of 0.1 molal solution of benzoic acid in benzene is 0.256 K. For benzene kf is 5.12 K kg mol<sup>-1</sup>. Calculate the value of van't Hoff factor for benzoic acid in benzene. What conclusion can you draw about the molecular state of benzoic acid in benzene.

2. The freezing point of a solution containing 0.2 g of acetic acid in 20.0 g of benzene is lowered by 0.45°C, calculate: (i) the molar mass of acetic acid from this data. (ii) van't Hoff factor [For benzene, Kf = 5.12 K kg mol<sup>-1</sup>] What conclusion can you draw from the value of van't Hoff factor obtained

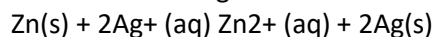
3. Calculate the freezing point depression expected for 0.0711 m aqueous solution of Na<sub>2</sub>SO<sub>4</sub>. If this solution actually freezes at -0.320°C, what would be the value of van't Hoff factor? (Kf for water is 1.86 K kg mol<sup>-1</sup>).

4. What is the freezing point of 0.4 molal solution of acetic acid in benzene in which it dimerises to the extent of 85 %? Freezing point of benzene is 278.4K and its molar heat of fusion is 10.042 KJ mol<sup>-1</sup>.

5. A 1.00 molal aqueous solution of trichloroacetic acid (CCl<sub>3</sub>COOH) is heated to its boiling point. The solution has the boiling point of 100.8°C. Determine the van't Hoff factor for trichloroacetic acid. (Kb for water 0.512 K kg Mol<sup>-1</sup>)

### QUESTIONS FROM ELECTROCHEMISTRY

1. Formulate the galvanic cell in which the following reaction takes place :



State : (i) Which one of its electrodes is negatively charged. (ii) The reaction taking place at each of its electrode. (iii) The carriers of current within this cell.

2. What is the necessity to use a salt bridge in a Galvanic cell?

3. Given that the standard electrode potential (E°) of metals are : K<sup>+</sup> /K = -2.93 V, Ag<sup>+</sup> /Ag = 0.80 V,

Cu<sup>2+</sup>/Cu = 0.34 V, Mg<sup>2+</sup>/Mg = -2.37 V, Cr<sup>3+</sup>/Cr = -0.74 V, Fe<sup>2+</sup> /Fe = -0.44 V. Arrange these metals in an increasing order of their reducing power.

4. Calculate ΔG° for the reaction : Mg(s) + Cu<sup>2+</sup> (aq) → Mg<sup>2+</sup> (aq) + Cu(s), Given E° cell = +2.71 V, 1 F = 96500 C mol<sup>-1</sup>.

5. Calculate e.m.f. of the following cell at 298 K  $2\text{Cr(s)} + 3\text{Fe}^{2+}(0.1\text{M}) \rightarrow 2\text{Cr}^{3+}(0.01\text{M}) + 3\text{Fe(s)}$

Given : E° (Cr<sup>3+</sup>|Cr) = -0.74 V, E° (Fe<sup>2+</sup>|Fe) = -0.44 V

### COMPUTER SCIENCE

1. Find output of the following code fragment.

```
x="hello world"
print(x[:2],x[:-2],x[-2:])
print(x[6],x[2:4])
print(x[2:-3],x[-4:-2])
```

2. What will be the output of the following Python code?

```
a=[1,2,3,4,5,6,7,8,9]
print(a[::2])
```

3. The below code is using a Python list and iterates using the range() function. What will be the output?

```
arr = [1, 2, 3, 4, 5, 6]
for i in range(1, 6):
    arr[i - 1] = arr[i]
for i in range(0, 6):
    print(arr[i], end = " ")
```

4. WAP to Merge two Python dictionaries into one

5. Delete a list of keys from a dictionary

Given:

```
sample_dict = {  
    "name": "Kelly",  
    "age": 25,  
    "salary": 8000,  
    "city": "New york"  
}
```

# Keys to remove

```
keys = ["name", "salary"]
```

Expected output:

```
{'city': 'New york', 'age': 25}
```

6. WAP Replace list's item with new value if found

You have given a Python list. Write a program to find value 20 in the list, and if it is present, replace it with 200. Only update the first occurrence of an item.

Given:

```
list1 = [5, 10, 15, 20, 25, 50, 20]
```

Expected output:

```
[5, 10, 15, 200, 25, 50, 20]
```

7. Write a program to display all prime numbers within a range

8.WAP Find all occurrences of a substring in a given string by ignoring the case

9.WAP Count all letters, digits, and special symbols from a given string

Given:

```
str1 = "P@#yn26at^&i5ve"
```

Expected Outcome:

Total counts of chars, digits, and symbols

Chars = 8

Digits = 3

Symbol = 4

10. Write a program to split a given string on hyphens and display each substring.

Given:

```
str1 = Emma-is-a-data-scientist
```

Expected Output:

Displaying each substring

Emma

is

a

data

scientist

**ENGLISH**

1. Read novels and story books to spend time qualitatively during summer vacation and prepare book reviews to be presented in the class. (At least any two)  
For Reference: ‘The Invisible Man’ by H G Wells, ‘The Tale of Two Cities’ by Charles Dickens, ‘Pride and Prejudice’ by Jane Austen, ‘The Harry Potter Series’ by J K Rowling, ‘Malgudi Days- Swami & Friends’ by R K Narayan.
2. Choose one of the topics for English project work, research, gather information, do surveys wherever necessary and work on it. Be creative, maintain originality and authenticity. A list of projects will be shared with you.
3. Watch some qualitative programs on television like National Geo, Discovery, BBC etc., debate and discussions, read newspaper particularly ‘The Hindu’ and ‘The Indian Express’ daily to enhance your vocabulary and improve speaking skills.
4. Answer the following questions in your homework notebook using appropriate format and specifications as given in the class:

**Comprehension Passage**

Read two comprehension passages and based on your understanding of the passages, write answer to the questions given. (The passages will be shared with you.)

**Notice Writing**

(i) The ‘Literary Society’ of Glory Public School is setting up a Creative Writing Club to encourage and develop the habit of creative writing. Draft a notice in 50 words for the school notice board, inviting students from classes VI-X to join the Writer’s Society. The members would be expected to stay back after school for 2 hours once a week. Mention day, date, time and venue. You are Ragini/ Rakesh, President of the Society.

(ii) Draft a notice in about 50 words, urging students of classes IX and XI to participate in a three-week leadership camp to be held in your school. Mention day, date, time and venue of the camp. You are Rita/ Kailash, President, Student Council.

**Letter to the Editor**

(iii) The newspapers today have full page advertisements promoting luxury items. With increase in consumerism, people find it difficult to resist and soon find themselves trapped in a world of social one-upmanship. Write a letter to the editor of a national daily expressing your views on the consequences of this consumerism giving suggestions on how to control this habit. You are Renu/ Rajan.

**Article Writing**

(iv) You are Nishi/ Nishant, a social worker, you feel that progress and advancement of India can be enhanced by educating the girl child. You believe that financial independence of girls is essential to lead a productive and respectable life in the society. Educated girls only can take decision about their bright future as well as for the betterment of their families. You decide to write an article in about 120-150 words to be published in a local newspaper expressing your views.

## **Summer Vacations Homework – English Core – May & June 2023**

### **A) Work to be done in English Notebook:**

1. Read English Newspaper daily. Either The Hindu or Indian Express. Write only two words with their meanings & pronunciations daily in your English notebook. Write date-wise.

**2. Write short notes in 60 to 80 words on each of the following in your English notebook with reference to the chapters mentioned:**

- a) Linguistic chauvinism (The last Lesson),
- b) A daughter's thoughts about her ageing parents (My Mother at Sixty-Six)
- c) The impact of child labour on children & society (Lost Spring),
- d) The tendency to escape from the anxiety of modern life (The Third Level)
- e) Conceit & arrogance of those in power (The Tiger King).

3. Solve the Reading Comprehension Passages to be sent in English Group in the third week of May. Write answers in your English Notebook.

**4. Read any one of the following books & write its book review in about 80 words:**

Animal Farm by George Orwell, The Catcher in the Rye by J. D. Salinger, Holes by Louis Sachar, To Kill a Mockingbird by Harper Lee, The Book Thief by Markus Zusak, 1984 by George Orwell,

Feluda Series by Satyajit Ray, The Perks of Being a Wallflower by Stephen Chbosky, The Giver by Lois Lowry, A Wrinkle in Time by Madeleine L'Engle, Little Women by Louisa May Alcott,

A Wizard of Earthsea by Ursula K. Le Guin, Persepolis by Marjane Satrapi, Me and Earl and

the Dying Girl by Jesse Andrews, Anne of Green Gables by L M Montgomery.

5. Watch any one of the following movies & write a movie review in 80 words in Your English Notebook:

Good Will Hunting (1997), Dead Poets Society (1989), Back to the Future (1985), Whiplash

(2014), Ferris Bueller's Day Off (1986), Life of Pi (2012), Stand by Me (1986), Life is Beautiful

(1997), The Boy in the Striped Pyjamas (2008), A Beautiful Mind (2001), Into the Wild (2007),

E.T. the Extra Terrestrial (1982), The Karate Kid (1984), Inside Out (2015), Spirited Away (2001), The Princess Bride (1987), Paddington (2015), The Pursuit of Happiness (2006), Whale Rider (2002), Up (2009).

**6. Explore the music of the following musical bands/artists & write an 80-word article on any one band/artist out of these greats:**

The Beatles, Queen, The Rolling Stones, Led Zeppelin, Pink Floyd, Nirvana, Radiohead, The Who, The Doors, The Beach Boys, Bob Dylan, Stevie Wonder, Jimi Hendrix, Prince, Al Green, Marvin Gaye, Whitney Houston.

**B) Work for learning, exploration & growth. Not to be written in English notebook:**

7. Study the following topics for the Monthly Test to be held in the last week of June:

The Last Lesson, Lost Spring, The Third Level, The Tiger King, My Mother at Sixty-six, Notice Writing, Formal & Informal Invitations & Replies.

8. Read all the chapters & poems in your syllabus at least once. From NCERT textbooks. Complete texts.

9. Stay away from screens & social media as much as possible. Observe No Screen & No Social Media days every week during weekends.

10. Take care of your health. Jog, run, play daily.

11. Spend quality time with your family.

	<p>12. Learn to cook any five recipes. Try to cook once a week, at least.</p> <p>13. Keep your surroundings clean &amp; well organised.</p> <p>14. Plan your holidays. Plan your days. Follow the plans rigorously.</p> <p>15. Learn to sing a song in your mother tongue &amp; translate it in English. Now sing in English with the same tune.</p> <p>16. What is fake news? Find about it. Learn how to identify fake news.</p> <p>17. What are logical fallacies? Find about them. Train your mind to spot various logical fallacies.</p> <p>18. Listen to the following famous speeches:          'I Have a Dream' by Martin Luther King Junior.          'Tryst With Destiny' by Jawahar Lal Nehru.</p> <p><b>19. Read the following poems:</b>          'If' by Rudyard Kipling,          'Where the Mind is Without Fear' by Rabindranath Tagore,          'Still, I Rise' by Maya Angelou,          'Rashmirathi' by Dinkar.</p> <p>20. Explore various AI tools.</p>
<p style="text-align: center;"><b>HINDI</b></p>	<p>निम्नलिखित में से किसी एक विषय का चयन कीजिए और अनुसंधानात्मक परियोजना तैयार कीजिए। कम से कम 20 से 25 पृष्ठों में चित्रों एवं विस्तृत जानकारी सहित परियोजना तैयार करें।</p> <ol style="list-style-type: none"> <li>1. महादेवी वर्मा, हरिवंश राय बच्चन, धर्मवीर भारती, हजारी प्रसाद द्विवेदी, तुलसीदास आदिकिसी एक का स्केच तैयार करते हुए उनके व्यक्तित्व और कृतित्व पर प्रकाश डालिए।</li> <li>2. अपने अनुभव क्षेत्र में आने वाली एक घरेलू सहायिका का साक्षात्कार लेकर उसके जीवन में आने वाली कठिनाइयों को रेखांकित करते हुए उसमें आप किस प्रकार के परिवर्तन चाहेंगे, एक परियोजना कार्य के रूप में तैयार कीजिए।</li> <li>3. अपने शहर में एक बड़े शॉपिंग मॉल में जाकर वहां खरीददारी करने वाले 10 लोगों के अनुभव को संकलित करें। इस हेतु प्रश्नावली तैयार कर निष्कर्ष प्राप्त करें एवं परियोजना कार्य के रूप में तैयार करें।</li> <li>4. लगातार बढ़ते ऑनलाइन बाजारों से लोग अपने घरेलू जीवन में किस प्रकार के दबाव व तनाव महसूस करते हैं। अपने परिचय क्षेत्र में आने वाले 10 लोगों की वार्ता को संकलित करते हुए परियोजना कार्य के रूप में तैयार कीजिए।</li> <li>5. 'जल है तो कल है' इस उक्ति का सामाजिक और सांस्कृतिक जीवन में क्या महत्व हो सकता है। अलग-अलग क्षेत्रों से काम करने वाले लोगों से बातचीत करते हुए उनके अनुभव संकलित कर एक परियोजना कार्य तैयार करिए।</li> <li>6. परंपरागत कृषि और आधुनिक कृषि माध्यमों में आने वाले परिवर्तनों को रेखांकित करते हुए आज के किसान जीवन की समस्याओं पर बिंदुवार परियोजना कार्य तैयार करिए।</li> <li>7. भारतीय परिवेश में पारंपरिक खेलों का महत्व आधारित करते हुए कौन से खेलों को आप विश्व ओलंपिक में शामिल करने का समर्थन करते हैं। संपूर्ण तथ्यों सहित एक परियोजना कार्य तैयार करें।</li> <li>8. ग्रामीण क्षेत्रों में मूलभूत इलाज की सुविधाओं के अभाव के चलते होने वाली आकस्मिक मौतों पर एक परियोजना कार्य तैयार करते हुए सुधार हेतु मौलिक सुझाव दीजिए।</li> <li>9. सांस्कृतिक लोक कलाकारों की सूची तैयार करते हुए उनके योगदान पर एक परियोजना कार्य तैयार करिए।</li> <li>10. आचार्य हजारी प्रसाद द्विवेदी 'शिरीष के फूल' के माध्यम से जीवन की अजेयता का मंत्र देते हैं। सामाजिक सांस्कृतिक, राजनीतिक संदर्भों में इस मंत्र का उपयोग किस तरह से हो सकता है, 10 बिंदुओं पर एक परियोजना कार्य तैयार करिए।</li> <li>11. आचार्य हजारी प्रसाद द्विवेदी के 10 निबंधों का अध्ययन कर उनमें निहित संदेशों को स्पष्ट करते हुए उनकी लोकमंगल की भावना पर एक परियोजना कार्य तैयार कीजिए।</li> </ol>

12. संविधान निर्माण समिति के प्रमुख सदस्यों का संक्षिप्त परिचय देते हुए संविधान निर्माण प्रक्रिया पर एक परियोजना कार्य तैयार कीजिए।

13. डा. भीमराव आंबेडकर के जीवन और महत्व को रेखांकित करते हुए उनके भारतीय समाज में योगदान पर एक परियोजना कार्य तैयार कीजिए।

गृह – कार्य

1. रचनात्मक लेखन :

क. यदि मेरे पंख होते

ख. मेरी रोमांचक यात्रा

ग. बारिश का एक दिन

घ. मेरे जीवन का आदर्श

## CHEMISTRY

### I. NUMERICALS BASED ON CONCENTRATION TERMS:

1. A solution of glucose (molar mass =  $180 \text{ g mol}^{-1}$ ) in water is labelled as 10% (by mass) would be the molality and molarity of the solution ? (Density of solution =  $1.2 \text{ g mL}^{-1}$ )

2. Calculate the molality of a solution containing 20.7 g of potassium carbonate dissolved in 100 g of solution, assume density of solution =  $1 \text{ g/ml}$

3. A solution of glucose ( $\text{C}_6\text{H}_{12}\text{O}_6$ ) in water is labelled as 10% by weight. What would be the molality of the solution ? (Molar mass of glucose =  $180 \text{ g mol}^{-1}$ )

4. Calculate the molarity and molality of a 15% solution (by weight) of sulphuric acid density =  $1.020 \text{ g cm}^{-3}$  (Atomic masses H = 1, O = 16, S = 32 amu).

5. Which aqueous solution has higher concentration 1 molar or 1 molal solution of same substance?

### II. QUESTIONS BASED ON RAOULT'S LAW

1. Two liquids A and B boil at  $145^\circ\text{C}$  and  $190^\circ\text{C}$  respectively. Which of them has higher vapour pressure at  $80^\circ\text{C}$ ?

2. 10 ml of liquid A was mixed with 10 ml of liquid B. The volume of the resulting solution was found to be 19.9 ml what do you conclude.

3. State Raoult's law for a binary solution containing volatile components.

4. Calculate the vapour pressure of a mixture containing 252 g of n-pentane (molar mass =  $72 \text{ g/mol}$ ) and 1400 g of n-heptane (molar mass =  $100 \text{ g/mol}$ ) at  $20^\circ\text{C}$ . The vapour pressures of n-pentane and n-heptane are 420 mm Hg and 36 mm Hg respectively.

5. Why is the vapour pressure of a solution of glucose in water lower than that of pure water?

### III. Numericals based on colligative properties

1. An aqueous solution of glucose is made by dissolving 10 g of glucose ( $\text{C}_6\text{H}_{12}\text{O}_6$ ) in 90 g of water. If the vapour pressure of pure water at 303 K be 32.8 mm Hg, what would be the vapour pressure of the solution?

2. A solution containing 8 g of a substance in 100 g of diethyl ether boils at  $36.86^\circ\text{C}$ , while pure ether boils at  $35.60^\circ\text{C}$ . Determine the molecular mass of the solute (For ether  $K_b = 2.16^\circ\text{C kg mol}^{-1}$ )

3. Calculate the freezing point of a solution containing 0.520 g glucose ( $\text{C}_6\text{H}_{12}\text{O}_6$ ) dissolved in 80.20 g of water. For water  $K_f = 1.86 \text{ K kg mol}^{-1}$ .

4. A solution containing 15 g urea (molar mass =  $60 \text{ g mol}^{-1}$ ) per litre of solution in water has the same osmotic pressure (isotonic) as a solution of glucose (molar mass =  $190 \text{ g mol}^{-1}$ ) in water. Calculate the mass of glucose present in one litre of its solution.

5. 1.00 g of a non-electrolyte solute dissolved in 50 g of benzene lowered the freezing point of benzene by 0.40 K. Find the molar mass of the solute. ( $K_f$  for benzene =  $5.12 \text{ K kg mol}^{-1}$ )

6. 100 mg of a protein is dissolved in just enough water to make 10.0 mL of solution. If the solution has an osmotic pressure of 13.3 mm Hg at  $25^\circ\text{C}$ , what is the molar mass of the protein? ( $R = 0.0821 \text{ L atm mol}^{-1} \text{ K}^{-1}$ ,  $760 \text{ mm Hg} = 1 \text{ atm}$ )

7. A 4% solution of sucrose is isotonic with 3% solution of an unknown organic substance. Calculate the molecular mass of unknown substance.

8. Why is the elevation in b.p. of water different in following solutions ? (i) 0.1 molar NaCl solution (ii) 0.1 molar sugar solution

9. Calculate the freezing point of the solution when 31 g of ethylene glycol ( $\text{C}_2\text{H}_6\text{O}_2$ ) is dissolved in 500 g of water. ( $K_f$  for water =  $1.86 \text{ K kg/mol}$ )

10. Calculate the mass of the compound (molar mass =  $256 \text{ g mol}^{-1}$ ) to be dissolved in 750 g of water to raise the boiling point of water to  $100.5^\circ\text{C}$ . ( $K_b$  for water =  $0.52^\circ\text{C kg mol}^{-1}$ )

	<p>benzene to lower its freezing point by 0.48 K (<math>K_f = 5.12 \text{ K kg mol}^{-1}</math>)</p> <p><b>IV. Numericals based on van't Hoff factor</b></p> <ol style="list-style-type: none"> <li>The freezing point depression of 0.1 molal solution of benzoic acid in benzene is 0.256 K. <math>K_f</math> for benzene is <math>5.12 \text{ K kg mol}^{-1}</math>. Calculate the value of van't Hoff factor for benzoic acid in benzene. What conclusion can you draw about the molecular state of benzoic acid in benzene?</li> <li>The freezing point of a solution containing 0.2 g of acetic acid in 20.0 g of benzene is lowered by <math>0.45^\circ\text{C}</math>, calculate: (i) the molar mass of acetic acid from this data. (ii) van't Hoff factor [For benzene <math>K_f = 5.12 \text{ K kg mol}^{-1}</math>] What conclusion can you draw from the value of van't Hoff factor obtained?</li> <li>Calculate the freezing point depression expected for 0.0711 m aqueous solution of <math>\text{Na}_2\text{SO}_4</math>. If this solution actually freezes at <math>-0.320^\circ\text{C}</math>, what would be the value of van't Hoff factor? (<math>K_f</math> for water is <math>1.86 \text{ K kg mol}^{-1}</math>).</li> <li>What is the freezing point of 0.4 molal solution of acetic acid in benzene in which it dimerises to the extent of 85 %? Freezing point of benzene is <math>278.4\text{K}</math> and its molar heat of fusion is <math>10.042 \text{ KJ mol}^{-1}</math>.</li> <li>A 1.00 molal aqueous solution of trichloroacetic acid (<math>\text{CCl}_3\text{COOH}</math>) is heated to its boiling point. The solution has the boiling point of <math>100.80^\circ\text{C}</math>. Determine the van't Hoff factor for trichloroacetic acid. (<math>K_b</math> for water <math>0.512 \text{ K kg Mol}^{-1}</math>)</li> </ol> <p><b><u>QUESTIONS FROM ELECTROCHEMISTRY</u></b></p> <ol style="list-style-type: none"> <li>Formulate the galvanic cell in which the following reaction takes place :  <math>\text{Zn(s)} + 2\text{Ag}^+(\text{aq}) \rightarrow \text{Zn}^{2+}(\text{aq}) + 2\text{Ag(s)}</math>            State : (i) Which one of its electrodes is negatively charged. (ii) The reaction taking place at each electrode. (iii) The carriers of current within this cell.</li> <li>What is the necessity to use a salt bridge in a Galvanic cell?</li> <li>Given that the standard electrode potential (<math>E^\circ</math>) of metals are : <math>\text{K}^+/\text{K} = -2.93 \text{ V}</math>, <math>\text{Ag}^+/\text{Ag} = 0.80 \text{ V}</math>, <math>\text{Cu}^{2+}/\text{Cu} = 0.34 \text{ V}</math>, <math>\text{Mg}^{2+}/\text{Mg} = -2.37 \text{ V}</math>, <math>\text{Cr}^{3+}/\text{Cr} = -0.74 \text{ V}</math>, <math>\text{Fe}^{2+}/\text{Fe} = -0.44 \text{ V}</math>. Arrange the metals in an increasing order of their reducing power.</li> <li>Calculate <math>\Delta G^\circ</math> for the reaction : <math>\text{Mg(s)} + \text{Cu}^{2+}(\text{aq}) \rightarrow \text{Mg}^{2+}(\text{aq}) + \text{Cu(s)}</math>, Given <math>E^\circ</math> cell : <math>2.01 \text{ V}</math>, <math>1 \text{ F} = 96500 \text{ C mol}^{-1}</math>.</li> <li>Calculate e.m.f. of the following cell at <math>298 \text{ K}</math> <math>2\text{Cr(s)} + 3\text{Fe}^{2+}(0.1\text{M}) \rightarrow 2\text{Cr}^{3+}(0.01\text{M}) + 3\text{Fe(s)}</math>            Given : <math>E^\circ (\text{Cr}^{3+} \text{Cr}) = -0.74 \text{ V}</math>, <math>E^\circ (\text{Fe}^{2+} \text{Fe}) = -0.44 \text{ V}</math></li> </ol>
<p><b>BIOLOGY</b></p>	<ol style="list-style-type: none"> <li>COMPLETE CLASSWORK NOTES OF CH. SEXUAL REPRODUCTION IN PLANTS</li> <li>COMPLTE HW OF CH.SEXUAL REPRODUCTION IN PLANTS</li> <li>ANSWERS THE QUESTIONS GIVEN.</li> <li>MAKE A PROJECT ON ARTIFICIAL HYBRIDISATION ( WRITE IN HW)</li> <li>MAKE LABELLED DIAGRAM OF MALE REPRODUCTIVE SYSTEM,FEMALE REPRODUCTIVE SYSTEM</li> </ol> <p>AND OTHER DIAGRAMS OF CHAPTER HUMAN REPRODUCTION.( IN CW)</p>
<p><b>PHYSICS</b></p>	<ol style="list-style-type: none"> <li>Define electric field intensity at a point and obtain the expression for electric field due to a single charge?</li> <li>Obtain the expression for electric field due to dipole on its axial line?</li> <li>Derive the expression for electric field due to dipole in its equatorial line?</li> <li>What are electric field lines? Write its properties? Draw electric field lines due to dipole?</li> <li>State Gauss theorem and apply it to find electric field due to infinite long wire carrying charge?</li> <li>State Gauss law and apply it to find electric field due to plane sheet carrying charge?</li> <li>Show that dipole placed in an uniform electric field experience torque?</li> </ol>

- |  |  |
|--|--|
|  | <ol style="list-style-type: none"><li>8. Define equi potential surface? Draw equipotential surface for dipole &amp; uniform electric field?</li><li>9. Show that potential due to dipole on equatorial line is zero?</li><li>10. Explain the principle of parallel plate capacitor?</li><li>11. Obtain the expression for capacitance of a parallel plate capacitor?</li><li>12. Show that energy stored in a capacitor is <math>\frac{1}{2} CV^2</math>?</li><li>13. Define drift velocity and derive the expression for drift velocity?</li><li>14. Define relaxation time and obtain the relation between resistivity interms of relaxation time?</li><li>15. Numerical from NCERT exercises chapter1 &amp; chapter 2</li><li>16. Board questions with solutions from last 5 years?</li><li>17. Investigatory project with project file and model</li><li>18. Completion of record writing 8 experiments &amp; 6 Activities</li></ol> |
|--|--|



**SUMMER VACATION HOLIDAY HOMEWORK (2023 – 2024)**

**CLASS - XII**

**Section- D**

**(DELETE THE ROW WHICH EVER IS NOT APPLICABLE)**

1. Read novels and story books to spend time qualitatively during summer vacation and prepare book reviews to be presented in the class. (At least any two)

For Reference: ‘The Invisible Man’ by H G Wells, ‘The Tale of Two Cities’ by Charles Dickens, ‘Pride and Prejudice’ by Jane Austen, ‘The Harry Potter Series’ by J K Rowling, ‘Malgudi Days- Swami & Friends’ by R K Narayan.

2. Choose one of the topics for English project work, research, gather information, do surveys wherever necessary and work on it. Be creative, maintain originality and authenticity. A list of projects will be shared with you.
3. Watch some qualitative programs on television like National Geo, Discovery, BBC etc., debate and discussions, read newspaper particularly ‘The Hindu’ and ‘The Indian Express’ daily to enhance your vocabulary and improve speaking skills.
4. Answer the following questions in your homework notebook using appropriate format and specifications as given in the class:

**ENGLISH**

**Comprehension Passage**

Read two comprehension passages and based on your understanding of the passages, write answer to the questions given. (The passages will be shared with you.)

**Notice Writing**

(i) The ‘Literary Society’ of Glory Public School is setting up a Creative Writing Club to encourage and develop the habit of creative writing. Draft a notice in 50 words for the school notice board, inviting students from classes VI-X to join the Writer’s Society. The members would be expected to stay back after school for 2 hours once a week. Mention day, date, time and venue. You are Ragini/ Rakesh, President of the Society.

(ii) Draft a notice in about 50 words, urging students of classes IX and XI to participate in a three-week leadership camp to be held in your school. Mention day, date, time and venue of the camp. You are Rita/ Kailash, President, Student Council.

**Letter to the Editor**

(iii) The newspapers today have full page advertisements promoting luxury items. With increase in consumerism, people find it difficult to resist and soon find themselves trapped in a world of social one-upmanship. Write a letter to the editor of a national daily expressing your views on the consequences of this consumerism giving suggestions on how to control this habit. You are Renu/ Rajan.

**Article Writing**

(iv) You are Nishi/ Nishant, a social worker, you feel that progress and advancement of India can be enhanced by educating the girl child. You believe that financial independence of girls is essential to lead a productive and respectable life in the society. Educated girls only can take decision about their bright future as well as for the betterment of their families. You decide to write an article in about 120-150 words to be published in a local newspaper expressing your views.

निम्नलिखित में से किसी एक विषय का चयन कीजिए और अनुसंधानात्मक परियोजना तैयार कीजिए।  
कम से कम 20 से 25 पृष्ठों में चित्रों एवं विस्तृत जानकारी सहित परियोजना तैयार करें।

1. महादेवी वर्मा, हरिवंश राय बच्चन, धर्मवीर भारती, हजारी प्रसाद द्विवेदी, तुलसीदास आदि किसी एक का स्केच तैयार करते हुए उनके व्यक्तित्व और कृतित्व पर प्रकाश डालिए।
2. अपने अनुभव क्षेत्र में आने वाली एक घरेलू सहायिका का साक्षात्कार लेकर उसके जीवन में आने वाली कठिनाइयों को रेखांकित करते हुए उसमें आप किस प्रकार के परिवर्तन चाहेंगे, एक परियोजना कार्य के रूप में तैयार कीजिए।
3. अपने शहर में एक बड़े शॉपिंग मॉल में जाकर वहां खरीददारी करने वाले 10 लोगों के अनुभव को संकलित करें। इस हेतु प्रश्नावली तैयार कर निष्कर्ष प्राप्त करें एवं परियोजना कार्य के रूप में तैयार करें।
4. लगातार बढ़ते ऑनलाइन बाजारों से लोग अपने घरेलू जीवन में किस प्रकार के दबाव व तनाव महसूस करते हैं। अपने परिचय क्षेत्र में आने वाले 10 लोगों की वार्ता को संकलित करते हुए परियोजना कार्य के रूप में तैयार कीजिए।
5. 'जल है तो कल है' इस उक्ति का सामाजिक और सांस्कृतिक जीवन में क्या महत्व हो सकता है। अलग-अलग क्षेत्रों से काम करने वाले लोगों से बातचीत करते हुए उनके अनुभव संकलित कर एक परियोजना कार्य तैयार करिए।
6. परंपरागत कृषि और आधुनिक कृषि माध्यमों में आने वाले परिवर्तनों को रेखांकित करते हुए आज के किसान जीवन की समस्याओं पर बिंदुवार परियोजना कार्य तैयार करिए।
7. भारतीय परिवेश में पारंपरिक खेलों का महत्व आधारित करते हुए कौन से खेलों को आप विश्व ओलंपिक में शामिल करने का समर्थन करते हैं। संपूर्ण तथ्यों सहित एक परियोजना कार्य तैयार करें।
8. ग्रामीण क्षेत्रों में मूलभूत इलाज की सुविधाओं के अभाव के चलते होने वाली आकस्मिक मौतों पर एक परियोजना कार्य तैयार करते हुए सुधार हेतु मौलिक सुझाव दीजिए।
9. सांस्कृतिक लोक कलाकारों की सूची तैयार करते हुए उनके योगदान पर एक परियोजना कार्य तैयार करिए।
10. आचार्य हजारी प्रसाद द्विवेदी 'शिरीष के फूल' के माध्यम से जीवन की अजेयता का मंत्र देते हैं। सामाजिक सांस्कृतिक, राजनीतिक संदर्भों में इस मंत्र का उपयोग किस तरह से हो सकता है, 10 बिंदुओं पर एक परियोजना कार्य तैयार करिए।
11. आचार्य हजारी प्रसाद द्विवेदी के 10 निबंधों का अध्ययन कर उनमें निहित संदेशों को स्पष्ट करते हुए उनकी लोकमंगल की भावना पर एक परियोजना कार्य तैयार कीजिए।
12. संविधान निर्माण समिति के प्रमुख सदस्यों का संक्षिप्त परिचय देते हुए संविधान निर्माण प्रक्रिया पर एक परियोजना कार्य तैयार कीजिए।
13. डा. भीमराव आंबेडकर के जीवन और महत्व को रेखांकित करते हुए उनके भारतीय समाज में योगदान पर एक परियोजना कार्य तैयार कीजिए।

#### गृह - कार्य

1. रचनात्मक लेखन :
- क. यदि मेरे पंख होते

	<p>ख. मेरी रोमांचक यात्रा</p> <p>ग. बारिश का एक दिन</p> <p>घ. मेरे जीवन का आदर्श</p>
<p><b>BUSINESS STUDIES</b></p>	<p><b>Lesson- Topics to learn</b></p> <p>1 Nature and Significance of Management  Features of Management  Objectives of Management  Management as an art  Management as a science  Management as a profession  Levels of management (top, middle, lower)  Functions of management  Coordination meaning features and importance  Note: PREPARE ATLEAST 15 MCQ QUESTIONS</p> <p>2 Principles of Management  LEARN AND WRITE THE FOLLOWING TOPICS IN THE CLASS COPY  Features of principles of management  Importance of principles of management  Fourteen principles of Fayol  Four principles of Taylor  7 Techniques of Taylor  Compare the contribution of Fayol and Taylor  Note: PREPARE ATLEAST 15 MCQ QUESTIONS</p> <p>3 Business environment  LEARN AND WRITE THE FOLLOWING TOPICS IN THE CLASS COPY  Meaning and features of business environment  Importance of Business Environment  Dimensions of BE  Demonetization meaning and features  Note: PREPARE ATLEAST 10 MCQ QUESTIONS</p>
<p><b>ACCOUNTANCY</b></p>	<p>Topics &amp; Questions for practice</p> <p>1. Rules applicable in the absence of partnership deed, and Fixed and fluctuating capital a/c  Fixed capital Q1 (p 101) Illustration 1 (p 71)  Fluctuating capital  Ex 2, ill 1</p> <p>2. Profit and loss appropriation  Ex. 3,4,5,6,7,10,11,12</p> <p>3. Interest on capital Ex 13, 14,15,16,22,26</p> <p>4. Interest on drawings 21,25,23,17,19, practice at the beginning/middle/ end of each quarter</p> <p>5. Guarantee of profit Ex 8,9,27,28,29,30,31,32,33,34,35</p> <p>6. Past adjustments Ex 40, P95 Do it 1,2,12,39,38, 42,37,36</p> <p>7. Valuation of Goodwill AP method  P124 Q9, P144 Q1 Do it, P 168 Q13, P130 Q15  Valuation of Goodwill  SP method  P128 Q12, P144 do it 3, P 130 Q 15  Valuation of Goodwill Capitalization of AP method  P129 Q14, P130 Q15 3rd part</p>

Valuation of Goodwill Capitalization of SP

SP method

P129 Q14, P129 Q15 3rd part

8. MCQ PREPARE ATLEAST 30 MCQ QUESTION FROM ALL THESE TOPICS

**INFORMATION  
PRACTICE**

Q1. Write a code to create a series object:

- using the Python sequence [4, 6, 8, 10]
- using the Python sequence [11, 21, 31, 41]
- using individual characters 'o', 'h' and 'o'.
- using a string "So funny"
- using 3 different words: "I", "am", "laughing"
- using a ndarray that has 5 elements in the range 24 to 64
- using a ndarray that is created by tiling a list [3, 5], twice.
- using a dictionary that stores the number of students in each section of class 12 in your school.
- That stores the initial budget allocated (50000/- each) for the four Qts of the year: Q1, Q2, Q3 and Q4.

Q2. A python list namely 'section' stores names ('A','B','C','D') of class 12 in your school. Another list 'contri' stores the contribution made by these students to a charity fund endorsed by the school. Write code to create a Series object that stores the contribution amount as the values and the section names as the indexes.

Q3. Sequences 'section' and 'contri' stores the section names ('A','B','C','D','E') and the contribution made by them respectively (6700, 5600, 5000, 5200, nil) for a charity. Your school has decided to donate as much contribution as made by each section i.e., the donation will be doubled. Write code to create a Series object that stores the contribution amount as the values and the section names as the indexes with datatype as float32.

Q4. Consider a Series object S1 that stores the number of students in each section of class 12:

A	39
B	41
C	42
D	44

First two sections have been given a task of selling tickets @100/- per ticket as part of a social experiment. Write code to display how much they have collected.

Q5. Consider a Series object S1 that stores the contribution of each section of class 12:

A	6700
B	5600
C	5000
D	5200

Write code to modify the amount of sections 'A' as 7600 and for sections 'C' and 'D' as 7000. Print changed object.

Q6. Number of students in classes 11 & 12 in 3 streams ('Sci', 'Com','Hum') are stored in two series objects C11 & C12. Write code to find total number of students in classes 11 & 12, stream wise.

Q7. Series object S1 that stores the contribution of each section of class 12:

A	6700
B	5600
C	5000
D	5200

Write a program to display which sections made a contribution more than Rs. 5500/-

**ENGLISH**

KENDRIYA VIDYALAYA MEG & CENTRE, BANGALORE

**CLASS XII ENGLISH CORE (CODE NO. 301)**

**SUMMER VACATION HOLIDAY HOMEWORK 2023**

Read novels and story books to spend time qualitatively during summer vacation and prepare book reviews to be presented in the class. (At least any two)

For Reference: 'The Invisible Man' by H G Wells, 'The Tale of Two Cities' by Charles Dickens, 'Pride and Prejudice' by Jane Austen, 'The Harry Potter Series' by J K Rowling, 'Malgudi Days- Swami & Friends' by R K Narayan.

Choose one of the topics for English project work, research, gather information, do surveys wherever necessary and work on it. Be creative, maintain originality and authenticity. A list of projects will be shared with you.

Watch some qualitative programs on television like National Geo, Discovery, BBC etc., debate and discussions, read newspaper particularly 'The Hindu' and 'The Indian Express' daily to enhance your vocabulary and improve speaking skills.

Answer the following questions in your homework notebook using appropriate format and specifications as given in the class:

**Comprehension Passage**

Read two comprehension passages and based on your understanding of the passages, write answer to the questions given. (The passages will be shared with you.)

**Notice Writing**

(i) The 'Literary Society' of Glory Public School is setting up a Creative Writing Club to encourage and develop the habit of creative writing. Draft a notice in 50 words for the school notice board, inviting students from classes VI-X to join the Writer's Society. The members would be expected to stay back after school for 2 hours once a week. Mention day, date, time and venue. You are Ragini/ Rakesh, President of the Society.

(ii) Draft a notice in about 50 words, urging students of classes IX and XI to participate in a three-week leadership camp to be held in your school. Mention day, date, time and venue of the camp. You are Rita/ Kailash, President, Student Council.

**Letter to the Editor**

(iii) The newspapers today have full page advertisements promoting luxury items. With increase in consumerism, people find it difficult to resist and soon find themselves trapped in a world of social one-upmanship. Write a letter to the editor of a national daily expressing your views on the consequences of this consumerism giving suggestions on how to control this habit. You are Renu/ Rajan.

**Article Writing**

(iv) You are Nishi/ Nishant, a social worker, you feel that progress and advancement of India can be enhanced by educating the girl child. You believe that financial independence of girls is essential to lead a productive and respectable life in the society. Educated girls only can take decision about their bright future as well as for the betterment of their families. You decide to write an article in about 120-150 words to be published in a local newspaper expressing your views.

**Summer Vacations Homework – English Core – May & June 2023**

**A) Work to be done in English Notebook:**

1. Read English Newspaper daily. Either The Hindu or Indian Express. Write only two words with their meanings & pronunciations daily in your English notebook. Write date-wise.

**2. Write short notes in 60 to 80 words on each of the following in your English notebook with reference to the chapters mentioned:**

- a) Linguistic chauvinism (The last Lesson),
- b) A daughter's thoughts about her ageing parents (My Mother at Sixty-Six)
- c) The impact of child labour on children & society (Lost Spring),
- d) The tendency to escape from the anxiety of modern life (The Third Level)
- e) Conceit & arrogance of those in power (The Tiger King).

3. Solve the Reading Comprehension Passages to be sent in English Group in the third week of May. Write answers in your English Notebook.

**4. Read any one of the following books & write its book review in about 80 words:**

Animal Farm by George Orwell, The Catcher in the Rye by J. D. Salinger, Holes by Louis Sachar, To Kill a Mockingbird by Harper Lee, The Book Thief by Markus Zusak, 1984 by George Orwell, Feluda Series by Satyajit Ray, The Perks of Being a Wallflower by Stephen Chbosky, The Giver by Lois Lowry, A Wrinkle in Time by Madeleine L'Engle, Little Women by Louisa May Alcott, A Wizard of Earthsea by Ursula K. Le Guin, Persepolis by Marjane Satrapi, Me and Earl and the Dying Girl by Jesse Andrews, Anne of Green Gables by L M Montgomery.

5. Watch any one of the following movies & write a movie review in 80 words in Your English Notebook:

Good Will Hunting (1997), Dead Poets Society (1989), Back to the Future (1985), Whiplash (2014), Ferris Bueller's Day Off (1986), Life of Pi (2012), Stand by Me (1986), Life is Beautiful (1997), The Boy in the Striped Pyjamas (2008), A Beautiful Mind (2001), Into the Wild (2007), E.T. the Extra Terrestrial (1982), The Karate Kid (1984), Inside Out (2015), Spirited Away (2001), The Princess Bride (1987), Paddington (2015), The Pursuit of Happiness (2006), Whale Rider (2002), Up (2009).

**6. Explore the music of the following musical bands/artists & write an 80-word article on any one band/artist out of these greats:**

The Beatles, Queen, The Rolling Stones, Led Zeppelin, Pink Floyd, Nirvana, Radiohead, The Who, The Doors, The Beach Boys, Bob Dylan, Stevie Wonder, Jimi Hendrix, Prince, Al Green, Marvin Gaye, Whitney Houston.

B) Work for learning, exploration & growth. Not to be written in English notebook:

7. Study the following topics for the Monthly Test to be held in the last week of June:

The Last Lesson, Lost Spring, The Third Level, The Tiger King, My Mother at Sixty-six, Notice Writing, Formal & Informal Invitations & Replies.

8. Read all the chapters & poems in your syllabus at least once. From NCERT textbooks. Complete texts.

9. Stay away from screens & social media as much as possible. Observe No Screen & No Social Media days every week during weekends.

10. Take care of your health. Jog, run, play daily.

11. Spend quality time with your family.

12. Learn to cook any five recipes. Try to cook once a week, at least.

13. Keep your surroundings clean & well organised.

14. Plan your holidays. Plan your days. Follow the plans rigorously.

15. Learn to sing a song in your mother tongue & translate it in English. Now sing in English with the same tune.

16. What is fake news? Find about it. Learn how to identify fake news.

17. What are logical fallacies? Find about them. Train your mind to spot various logical fallacies.

18. Listen to the following famous speeches:

'I Have a Dream' by Martin Luther King Junior.

'Tryst With Destiny' by Jawahar Lal Nehru.

**19. Read the following poems:**

'If' by Rudyard Kipling,

'Where the Mind is Without Fear' by Rabindranath Tagore,

'Still, I Rise' by Maya Angelou,

'Rashmirathi' by Dinkar.

20. Explore various AI tools.

**Happy vacations!!!!!! May you keep growing!!!!!! Best wishes!!!!!!**



PROJECT WORK DETAILS  
A FEW SUGGESTIVE TOPICS FOR CLASS XII PROJECTS

1. The Indus Valley Civilization-Archaeological Excavations and New Perspectives
2. The History and Legacy of Mauryan Empire
3. "Mahabharat"- The Great Epic of India
4. The History and Culture of the Vedic period
5. Buddha Charita
6. A Comprehensive History of Jainism
7. Bhakti Movement- Multiple interpretations and commentaries.
8. "The Mystical Dimensions of Sufism
9. Global legacy of Gandhian ideas
- 10.The Architectural Culture of the Vijayanagar Empire
- 11.Life of women in the Mughal rural society
- 12.Comparative Analysis of the Land Revenue Systems introduced by the Britishers in India
- 13.The Revolt of 1857- Causes; Planning & Coordination; Leadership, Vision of Unity
- 14.The Philosophy of Guru Nanak Dev
- 15.The Vision of Kabir
- 16.An insight into the Indian Constitution
17. Comparative study of Stupas and Pillar edicts
18. Comparative study of Mughal and Vijayanagar architecture

1. Steps involved in the conduct of the project:

Students may work upon the following lines as suggested:

1. Choose a Title/Topic
  2. Need of the Study, Objective of the Study
  3. Hypothesis (an interpretation of a practical situation or condition taken as the ground for action)
  4. Content -**Timeline, Maps, Mind maps, Pictures, etc. (Organization of Material/Data Present Material/Data)**
  5. Analysing the Material/Data for Conclusion
  6. Draw the Relevant Conclusion
  7. **Bibliography**
2. Expected Checklist for the Project Work:
1. Introduction of topic/ title
  2. **Identifying the causes, events, consequences and/or remedies**
  3. Various stakeholders and effect on each of them
  4. **Advantages and disadvantages of situations or issues identified**
  5. Short-term and long-term implications of strategies suggested during research
  6. Validity, reliability, appropriateness, and relevance of data used for research work and for presentation in the project file
  7. Presentation and writing that is succinct and coherent in project file
  8. Citation of the materials referred to, in the file in footnotes, resources section, **bibliography etc.**

**GEO**

Geography Summer Holiday Home work  
I . Practical - Write ch -1 in your record book .  
II. Prepare a PPT for the allotted chapter ( collect sources beyond the content/paste pictures, diagram if required)  
III. Make an atlas in a scrap book.  
Note: Do the work neatly and submit on time

**POL.SC.**

1,Challenges of Nation Building ( write Question with answers)  
2,End of Bipolarity (project work)