

ARMY PUBLIC SCHOOL
HOLIDAY HOMEWORK-2023-24

CLASS: XII

SUBJECT: - ENGLISH

1. Collect varied invitation formats- (formal and informal) and make a collage depicting varieties of invitations. (Be pasted in notebook) if collage is not feasible.
2. (A) Draft a job application with cover letter and complete Resume for the post of a receptionist in a school.
(B) Make a list for Educational Qualification required for various jobs and show presentation in tabular format.
3. NOTE- Pls select one topic for your project file and prepare it well for Viva.

PROJECT 1: PLIGHT OF OLD AGE PEOPLE

Objective

About the Poetess (with photos)

Poetess' Personal Experience - Common Paradox of Human Relationships

Portrayal of Sensational Separation Between a mother and a daughter

Plight of Old Age People: Ugly Truth About Old Age (with photos) Reasons Behind the Need of Old Age Homes

Respect for Elderly Parents

Efforts for Stress-Free and Secured Life of Aged People

Visit to an Old Age Home (photos of some aged people living in such homes)

Positive and Negative Opinions of Aged People Living in Old Age Homes

How to Strike a Balance Between Duties and Responsibilities of Children and Society

Data Regarding Miserable State of Old Age People Role of Youth to Improve the Plight of Aged People

Bibliography or References

II. Conduct an interview with an old- aged person. Prepare a Questionnaire consisting of 15 questions, write answers and then prepare a report in about 800 words (maximum 7-8 pages with pictures) You can take ideas from the following links:

<https://slate.com/human-interest/2018/01/interview-with-an-old-person-gary-goodson-age-82-from-idaho-falls-idaho.html>

<https://www.joincake.com/blog/questions-to-ask-old-people/>

https://www.shaalaa.com/question-bank-solutions/imagine-you-have-interview-old-woman-who-lives-old-age-home-write-set-8-10-questions-interview-you-may-take-help-following-points-writing-skill_51308#z=HwkdIIQv

PROJECT 2: INDIGO SHARECROPPING

Objectives

What is Indigo Sharecropping? (Brief history) Natural Indigo Harvesting (pictures)

Dyeing technology (pictures) Chemical properties of indigo

Difference between Natural and Chemical indigo

Advantages of natural indigo over chemical indigo and vice versa Efforts by Gandhi to put an end to Sharecropping in Champaran Gandhi as a leader.

Bibliography

II. Conduct an interview with an Indian farmer. Prepare a Questionnaire consisting of 15 questions, write answers and then prepare a report in about 800 words (maximum 7-8 pages with pictures) You can take ideas from the following YouTube link.

<https://youtu.be/yX6BCY5ykBo>

<https://youtu.be/w1-ASNYNIKY>

<https://youtu.be/n0eclUZwmbM>

PROJECT 3: A ROADSIDE STAND

Objective: class inequality
 Rural poor and indifferent attitude of the city dwellers
 Author's Biography. (With Pictures)
 Introduction, Pictorial view of a roadside stand
 Two different and incompatible worlds. (pictures)
 Pitiabile condition of rural poor (pictures)
 Causes of gap between the rich and the poor.
 Wide disparity b/w 'haves' and 'have-nots'
 Role of government for uplifting them
 Bibliography or References

II. Conduct an interview with a poor rural vegetable seller and a city dweller. Prepare a Questionnaire consisting of 15 questions, write answers and then prepare a report in about 800 words (maximum 7-8 pages with pictures)

PROJECT 4: ACID ATTACK: AN ATTACK ON FACE AND FUTURE

Objective

About some real cases of acid attacks in India (Any two) their brief stories. Photos (if possible both before and after the acid attack)
 Reasons behind acid attacks
 Types of acids, their use, and their availability
 Effects on survivors in terms of their mental and physical health
 Psychological, and social issues and medical effects Prevention:

Role of NGOs Regulations of acid sale
 Data regarding acid attacks in India
 Role and support of various celebrities towards the problem
 Latest Indian movies.... brief mention
 Bibliography or References

II. Conduct a survey with an acid attack victim and prepare a report in about 800 words (maximum 7-8 pages with figures and pictures) You can take ideas from the following links.

- <https://thelogicalindian.com/exclusive/laxmi-chaapak-interview/>
- <https://www.shethepeople.tv/news/india-acid-attacks-survivors-data/>

PROJECT 5: 'A THING OF BEAUTY AND IT'S ROLE IN HUMAN LIFE

Objective
 About author John Keats(pictures)
 Different characteristics of nature like it's eternal, changeless, perfect , source of true happiness, etc) (beautiful pictures of Nature)
 Comparison of human life and Nature (1page) For example:

HUMAN	NATURE
Change	Changeless
Mortal	Immortal
Death & d\Decay	Eternal

Description of beautiful things in nature like

- Rivers: Symbol of excitement, adventure, healing, never ending supply of life...
 - Sun: equality, light, hope royalty, divinity, positivity power.
 - Trees: lively, wisdom, prosperity, transformation...
 - Animals: divine, moving, growing, fertility, happiness elegance, strength, energy wisdom....
 - Flowers: purity, hope, beautiful, Innocence, humility, youthful....
 - Beauty of Mighty dead: Stories of Saints and sages, their work, and deeds, how they immortalized themselves ‘
- (Maximum 6 -7 pages with pictures)

Any 10 quotes related to the beauty of Nature.

Bibliography or References.

II. Conduct an interview with any environmentalist. Prepare a Questionnaire consisting of 15 questions, write answers and then prepare a report in about 800 words (maximum 7-8 pages with pictures)

1. <https://www.indeed.com/career-advice/interviewing/environmental-interview-questions>
2. <https://india.mongabay.com/2021/05/interview-bittu-sahgal-young-people-want-to-protect-the-environment-but-dont-have-their-hands-on-the-wheel/>

PROJECT 6 :CHILD LABOUR IN INDIA

Objective

Definition of Child Labour

Child labour: Causes and Consequences 7. Different industries where they are employed.

Diamond Industry Bangle making Industry Firework crackers Carpet weaving Silk manufacturing, etc.

Hazardous Working conditions and kind of injuries and diseases they suffer from Initiative against child labour by Indian government.

Various NGOs

International Labour Organisation

. SOS Children's Village in India

The Child Labour Prohibition and Regulation Act ,1986 Statistics showing child labour in India.

Ways to eliminate child labour.

II. Conduct an interview with any social activist working to stop Child Labour in India. Prepare a Questionnaire consisting of 15 questions, write answers and then prepare a report in about 800 words (maximum 7-8 pages with pictures)

1. <https://www.researchgate.net/topic/Child-Labor>

2. <https://www.womensweb.in/2014/09/child-labour-in-india-suma-ravi/>

SUBJECT: -MATHS

Do these 10 Practical in your Practical Notebook.

- (1) To verify that the relation R in the set L of all lines in a plane, defined by $R = \{(l, m) : l \text{ is perpendicular to } m\}$ is symmetric but neither reflexive nor transitive.
- (2) To demonstrate a function which is not one-one but is onto.
- (3) To draw the graph of $\sin^{-1}x$, using the graph of $\sin x$ and demonstrate the concept of mirror reflection (about the line $y = x$).
- (4) To find analytically the limit of a function $f(x)$ at $x = c$ and to check the continuity of the function at that point.

- (5) To understand the concepts of decreasing and increasing functions.
- (6) To understand the concepts of local maxima, local minima and point of inflection.
- (7) To construct an open box of maximum volume from a given rectangular sheet by cutting equal squares from each corner.
- (8) To verify that amongst all the rectangles of the same perimeter, the square has the maximum area.
- (9) To verify that angle in a semi-circle is a right angle, using vector method.
- (10) To explain the computation of conditional probability of a given event A, when event B has already occurred, through an example of throwing a pair of dice.

Solve the following questions:

(1) Show that $A = \begin{bmatrix} 5 & 3 \\ -1 & -2 \end{bmatrix}$ satisfies the equation $A^2 - 3A - 7I = O$ and hence find A^{-1} .

(2) Find nonzero values of x satisfying the matrix equation:

$$x \begin{bmatrix} 2x & 2 \\ 3 & x \end{bmatrix} + 2 \begin{bmatrix} 8 & 5x \\ 4 & 4x \end{bmatrix} = 2 \begin{bmatrix} (x^2 + 8) & 24 \\ 10 & 6x \end{bmatrix}$$

(3) $A = \begin{bmatrix} \cos a & \sin a \\ -\sin a & \cos a \end{bmatrix}$, then show that $A^2 = \begin{bmatrix} \cos 2a & \sin 2a \\ -\sin 2a & \cos 2a \end{bmatrix}$.

(4) Construct a 3×3 matrix whose elements are given by $a_{ij} = \frac{(i+2j)}{5}$

(5) If A, B are symmetric matrices of same order, then what can be said for matrix $AB - BA$?

(6) Express the matrix $A = \begin{bmatrix} 1 & 2 & 3 \\ -4 & -1 & 0 \\ 3 & 5 & 1 \end{bmatrix}$ as the sum of a symmetric and a skew-symmetric

matrix.

(7) Complete the following table.

Order of the matrix

A	B	$A \pm B$	AB
2×2	2×2		
2×3	3×2		
3×4	4×1		
3×3	3×3		
2×3		2×3	
	3×2		1×2
2×3		2×3	

(8) Two booksellers A and B sell the textbook of Mathematics and Applied Mathematics. In the month of march, bookseller A sold 250 books of Mathematics and 400 books of Applied Mathematics whereas bookseller B sold 230 books of Mathematics and 425 books of Applied Mathematics. In the month of April, bookseller A sold 550 books of Mathematics and 300 books of Applied Mathematics and bookseller B sold 270 books of Mathematics and 450 books of Applied Mathematics. Represent the given information into matrix form and Find the total sale for both the booksellers in the month of March and April, using matrix algebra.

(9) For what value of k, points P (3,-2), Q (8, 8) and R (k, 2) are collinear.

- (10) If the value of a third order determinant is 11, then the value of the square of the determinant formed by the cofactors will be:
 (a.) 1331 (b.) 14641 (c.) 121 (d.) 11
- (11) If A is square matrix such that $A^2 = A$, then $(I + A)^3 - 7A$ is equal to
 a) $3A$ b) $I - A$ c) A d) I

Question No. 12 to 15 are based on the given text. Read the text carefully and answer the questions:

On her birthday, Seema decided to donate some money to the children of an orphanage home. If there were 8 children less, everyone would have got ₹10 more. However, if there were 16 children more, everyone would have got ₹10 less.

Let the number of children be x and the amount distributed by Seema for one child be y (in ₹).



- (12) The equations in terms x and y are:
 a. $5x - 4y = 40$ b. $5x - 4y = 40$ c. $5x + 4y = 40$ d. $5x - 4y = 40$
 $5x - 8y = -80$ $5x - 8y = 80$ $5x - 8y = -80$ $5x + 8y = -80$
- (13) The number of children who were given some money by Seema is:
 a. 23 b. 30 c. 40 d. 32
- (14) How much amount is given to each child by Seema?
 a. ₹ 26 b. ₹ 32 c. ₹ 30 d. ₹ 62
15. How much amount does Seema spend in distributing the money to all the students of the Orphanage?
 a. ₹ 609 b. ₹ 960 c. ₹ 906 d. ₹ 690
- (16) The principal value of following questions:
 (i) $\tan^{-1}(\tan\frac{7\pi}{6})$ (ii) $\cos^{-1}(\frac{-1}{\sqrt{2}})$ (iii) $\sin^{-1}(\frac{-1}{\sqrt{2}})$ (iv) $\sec^{-1}(-\sqrt{2})$ (v) $\operatorname{cosec}^{-1}(\frac{2}{\sqrt{3}})$
- (17) Number of relations that can be defined on the set $A = \{a, b, c, d\}$ is
 a. 24 b. 4^4 c. 16 d. 2^{16}
- (18) Consider the non – empty set consisting of children in a family and a relation R defined as $a R b$ if a is brother of b . Then R is
 a. both symmetric and transitive b. transitive but not symmetric
 c. neither symmetric nor transitive d. symmetric but not transitive
- (19) If the set A contains 5 elements and the set B contains 6 elements, then the number of one – one and onto mappings from A to B is
 a. none of these b. 720 c. 120 d. 0
- (20) Consider the mapping $f : A \rightarrow B$ is defined by $f(x) = \frac{x-1}{x-2}$ such that f is a bijection.
 (i) Domain of f is
 a. $\mathbb{R} - \{0\}$ b. $\mathbb{R} - \{2\}$ c. $\mathbb{R} - \{1, 2\}$ d. \mathbb{R}

(ii) Range of f is

a. R

b. R - {1, 2}

c. R - {1}

d. R - {0}

(21) Use the 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.

$$x - y + 2z = 1, \quad 2y - 3z = 1, \quad 3x - 2y + 4z = 2$$

(22) The sum of three numbers is 6. If we multiply third number by 3 and add second number to it, we get 11. By adding first and third numbers, we get double of the second number. Represent it algebraically and find the numbers using matrix method.

(23) Let A be a non-singular square matrix of order 3 X 3. Then $|adjA|$ is equal to

(a) $|A|$

(b) $|A|^2$

(c) $|A|^3$

(d) $|A|$

SUBJECT: - PHYSICS

All the students will prepare an investigatory project file on any of the topic given below:

SR.NO	NAME OF TOPICS
1	Charing by conduction induction
2	Krichoff's law and wsb
3	Moving Coil Galvanometer
4	Ac generator
5	Transformer
6	Electromagnetic Induction
7	Reflection and referection
8	Interference and dfferaction
9	Polarisation of light
10	Pn junction half wave and full wave rectifier
11	Earth's magnetism
12	Special type of pn junction diode
13	Electromagnets
14	Photo electric effect
15	Capacitor and its applications

SUBJECT:- CHEMISTRY

List of Chemistry Investigatory Project (2023-24)

Roll No.	Title of the Project
01, 27	Effect of Acid rain on Limestone rock
02, 28	To determine the rate of fermentation of various fruit juices
03,29	To measure amount of Acetic acid present in Vinegar
04, 30	Amount of Casein in Milk

05, 31	To study the method of purification of water
06, 32	Determination of Caffeine in the various Tea samples
07, 33	Synthesis of Aspirin
08, 34	Study of the acids and mineral contents of vegetables and fruits
09, 35	Preparation of Potash Alum
10, 36	To study the foaming capacity of soaps and the effect of addition of Sodium carbonate on their foaming capacity
11, 37	To check ions present in toothpaste
12, 38	Analysis of Honey
13	To determine which antacid neutralize stomach acid most
14	Study of pH in different samples of water
15	Rate of evaporation in various liquids
16	Determination of EMF of a cell
17	To study the setting of cement
18	Comparative study and Qualitative analysis of different brands of cold drinks available in Market
19	Study the quantity of casein present in different samples of milk
20	Study of the presence of oxalate ions in guava fruit at different stages of ripening.
21	Preparation of soybean milk and its comparison with natural milk with respect to curd formation, the effect of temperature, etc.
22	Study of the effect of Potassium Bisulphate as a food preservative under various conditions (temperature, concentration, time, etc.)
23	Study of digestion of starch by salivary amylase and effect of pH and temperature on it.
24	Comparative study of the rate of fermentation of the following materials: wheat flour, gram flour, potato juice, carrot juice, etc.
25	Extraction of essential oils present in Saunf (aniseed), Ajwain (carum), Illaichi (cardamom).
26	Study of common food adulterants in fat, oil, butter, sugar, turmeric power, chilli powder and pepper.

Dear students important message regarding CHEMISTRY Projects

Read the message carefully and follow the instruction

- 1. You all have to prepare your chemistry project file without spiral binding in A4 Size pages.**
- 2. Minimum 20 pages are required**
- 3. Sequence order is Mendatory as per allotted roll number wise.**

CHAPTER 2 **SOLUTIONS**

Short Answer Type Question(1 mark)

- Q1. What is semi permeable membrane. Give an example of a material use for making semipermeable membrane for carrying out reverse osmosis?
- Q2. Solution A is obtained by dissolving 1 g of urea in 100 g of water and solution B is obtained by dissolving 1 g of glucose in 100g of water. Which solution will have a higher boiling point and why?
- Q3. Explain why on addition of 1 mol of NaCl to 1 litre of water, the boiling point of water increases, while addition of 1 mol of methyl alcohol to one litre of water decreases its boiling point?
- Q4. Define an ideal solution and write one of its characteristics?
- Q5. What is meant by reverse osmosis ?
- Q6. Explain boiling point elevation constant for a solvent / Define ebullioscopic constant?
- Q7. Explain why aquatic species are more comfortable in cold water rather than in warm water?
- Q8. Why do gases nearly always tend to be less soluble in liquid as the temperature is raised?
- Q9. How is relative lowering of vapour pressure defined for a solution consisting of volatile solvent and non – volatile solute? How is this function related to the mole fraction of the solvent and of the solute?
- Q10. What is meant by abnormal molecular mass of solute? Discuss the factors which bring abnormality in the experimentally determined molecular masses of solutes using colligative properties?
- Q11. How is the vapour pressure of a solvent affected when a non volatile solute is dissolved in it?
- Q12. The depression in freezing point of water observed for the same molar concentrations of acetic acid, trichloro acetic acid and trifluoroacetic acid increases in the order as stated above. Explain?
- Q13. Differentiate between molarity and molality for a solution. How does a change in temperature influence their values?
- Q14. What is meant by colligative property. List any four factors on which colligative properties of a solution depend?
- Q15. An aqueous solution of sodium chloride freezes below 273K. Explain the lowering in freezing point of water with the help of a suitable diagram?
- Q16. A solution prepared by dissolving 1.25g of oil of winter green (methyl salicylate) in 99.0 g of benzene has a boiling point of 80.31°C . Determine the molar mass of this compound (BP of pure benzene = 80.31°C & K_B for benzene = 2.53 mol^{-1})
- Q17. A sample of drinking water was found to be severely contaminated with chloroform CHCl_3 , supposed to be carcinogen. The level of contamination was 15ppm (by mass)? Express this in percent by mass.
- (ii) Determine the molality of CHCl_3 in water sample.
- Q18. Some ethylene glycol is added to your car's cooling system along with 5kg of water. If the freezing point of water-glycol solution is -15°C , what is the boiling point of the solution?
- Q19. Assuming complete dissociation. Calculate the expected freezing point of a solution prepared by dissolving 6g of Glauber's salt, $\text{Na}_2\text{SO}_4 \cdot 10 \text{ H}_2\text{O}$ in 0.1 Kg mol^{-1} of water. K_f of water = $1.86 \text{ K Kg mol}^{-1}$.
- Q20. Calculate the mass of a nonvolatile solute (molar mass 40 g mol^{-1}) which should be dissolved in 114 g octane to reduce its vapour its pressure to 80%?

- Q21. 19.5g of CH_2FCOOH is dissolved in 500g of water. The depression in freezing point observed is 1°C . Calculate the Van't Hoff factor and dissociation constant of fluoroacetic acid. K_f for water is $1.86 \text{ K Kg mol}^{-1}$.
- Q22. Non ideal solutions exhibit either positive or negative deviations from Raoult's law. What are these deviations and why are they caused? Explain with one example for each type?
- Q23. 2 g of benzoic acid ($\text{C}_6\text{H}_5\text{COOH}$) dissolved in 25g of benzene shows a depression in freezing point equal to 1.62 K. Molal depression constant for benzene is $4.9 \text{ K kg mol}^{-1}$. What is the percentage association of acid if it forms dimer in solution?
- Q24. (i) What is Van't Hoff factor? What types of values can it have if in forming the solution the solute molecules undergo
- Dissociation?
 - Association?
- Q25. (i) The molecular masses of polymers are determined by osmotic pressure method and not by measuring other colligative properties. Give two reasons?
At 300K, 36g of glucose $\text{C}_6\text{H}_{12}\text{O}_6$ present per litre in its solution has a pressure of 4.98 bar. If the osmotic pressure of another glucose solution is 1.52 bar at the same temperature, calculate the concentration of the other solution?

CHAPTER 3 ELECTRO CHEMISTRY

Short Answer Type Question (1 Mark each)

- Q1. A galvanic cell has electrical potential of 1.1V. If an opposing potential of 1.1 V is applied to this cell, what will happen to the cell reaction and the current flowing through the cell?
- Q2. Why does the conductivity of a solution decrease with dilution?
- Q3. What does the negative sign the expression $E^\circ_{\text{Zn}^{2+}/\text{Zn}} = -0.76 \text{ V}$ mean?
- Q4. State Kohlrausch laws of independent migration of ions?
- Q5. Write two advantages of H_2O_2 fuel cell over ordinary cell?
- Q6. Express the relation among the conductivity of a solution in the cell, the cell constant and the resistance of solution in the cell?
- Q7. What is electrode potential?
- Q8. Is it safe to stir AgNO_3 solution with a copper spoon? Why or Why not ?
Given :- $E^\circ_{\text{Ag}^+/\text{Ag}} = 0.8 \text{ volt}$ and $E^\circ_{\text{Cu}^{2+}/\text{Cu}} = 0.34 \text{ volt}$
- Q9. What is the role of ZnCl_2 in a dry cell?
- Q10. State faraday's first law of electrolysis ?
- Q11. What is corrosion? Describe the role of zinc in cathodic protection of iron. Can we use tin in place of zinc for this purpose? Give reason.
- Q12. Calculate the potential of hydrogen electrode in contact with a solution whose pH is 10.
- Q13. Mention the reactions occurring at (i) Anode (ii) Cathode, during the working of a mercury cell. Why does the voltage of a mercury cell remain constant during its operation?
- Q14. Explain why electrolysis of aqueous solution of NaCl gives H_2 at cathode & Cl_2 at anode? Write overall reaction?
- Q15. Calculate ΔG for the reaction, $\text{Mg (s)} + \text{Cu}^{2+} (\text{aq}) \rightarrow \text{Mg}^{2+} (\text{aq}) + \text{Cu (s)}$
Given $E^\circ_{\text{cell}} = + 2.71 \text{ V}$ $1\text{F} = 96500 \text{ (Cmol}^{-1}\text{)}$
- Q16. Calculate the degree of dissociation of acetic acid at 298K given that
 $\lambda_m^\circ (\text{CH}_3 \text{COOH}) = 11.7 \text{ Scm}^2 \text{ mol}^{-1}$
 $\lambda_m^\circ (\text{CH}_3 \text{COO}^-) = 40.9 \text{ Scm}^2 \text{ mol}^{-1}$
 $\lambda_m^\circ (\text{H}^+) = 349.1 \text{ Scm}^2 \text{ mol}^{-1}$
- Q17. A solution of $\text{Ni(NO}_3)_2$ is electrolyzed between platinum electrodes using a current of 5 A for 20 min. What mass of nickel will be deposited at the cathode?

Given : Atomic mass of Ni = 58.7 gmol⁻¹ 1F = 96,500 (mol⁻¹)

- Q18. (a) Define electrochemical series .
 (b) Given that the standard electrode potentials (E°) metals are :-
 $K^+/K = -2.93V$, $Ag^+/Ag = 0.8V$, $Cu^{2+}/Cu = 0.34V$, $Mg^{2+}/Mg = -2.37V$,
 $Cr^{3+}/Cr = -0.74$, $Fe^{2+}/Fe = -0.44V$.

Arrange these metals in an increasing order of their reducing power.

Q19. Define limiting molar conductivity. Why conductivity of an electrolyte solution decreases with the decrease , in concentration?

Q20. Three electrolytic cells A, B,C containing solutions of ZnSO₄ , AgNO₃ and CuSO₄ respectively are connected in series . A steady current of 1.5A was passed through them until 1.45 g of Ag were deposited at the cathode of cell B. How long did the current flow? What mass of copper and what mass of zinc were deposited in the concerned cells? (Atomic mass of Ag = 108 , Zn = 65.4 u and Cu = 63.5u)

Q21. What type of battery is lead storage battery? Write the anode and cathode reactions and the overall cell reaction occurring in the operation of a lead storage battery?

Q22. The resistance of 0.01M NaCl solution at 25°C is 200 Ω. The cell constant of the conductivity cell used is unity. Calculate the molar conductivity of the solution.

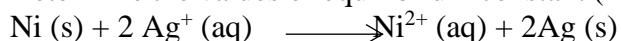
Q23. A strip of nickel metal is placed in a 1 molar solution of Ni(NO₃)₂ and a strip of silver metal is placed in one molar solution of AgNO₃. An electrochemical cell is created when the two solutions are connected by a salt bridge and the two strips are connected by wires to a voltmeter?

Write the balanced equations for the overall reaction occurring in the cell and calculate the cell potential.

Calculate the cell potential, E at 25°C for the cell, if the initial concentration of Ni(NO₃)₂ is 0.100 molar and initial concentration of AgNO₃ is 1.00 molar.

[E° Ni²⁺/Ni = - 0.25V, E° Ag⁺/Ag = 0.8V log 10⁻¹ = -1]

Q24. Determine the values of equilibrium constant (K_c) and ΔG° for the following reaction.



E° = 1.05V (1F = 96500 cmol⁻¹)

Q25. Set up Nernst equation for the standard dry cell. Using this equation show that the voltage of a dry cell has to decrease with use?

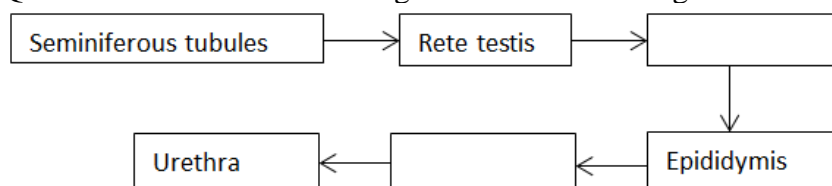
SUBJECT: BIOLOGY

1. Make an Investigatory project on any one of the topics from your Ncert book.
2. Complete the diagrams and record the practicals neatly in your practical files.
3. Attempt the following Question bank pertaining to the Chapters taught in class.

Very Short Answer Type Questions

Q.1. List the following events observed in human reproduction in chronological order. Fertilization, gametogenesis, insemination, gestation, parturition, implantation.

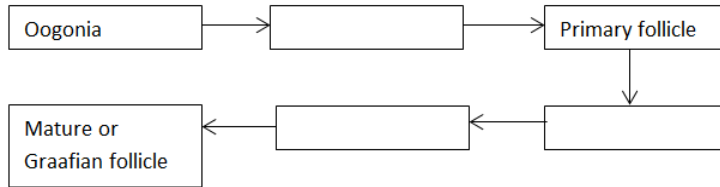
Q.2. Fill in the missing boxes exhibiting the route of sperm transport.



Q.3. Name the hormone crucial in parturition. Does the parturition signal originate from the mother or the fetus?

Q.4. List the names of the hormones, endocrine glands along with functions of the hormones that are crucial in causing spermatogenesis.

Q.5. Fill in the missing boxes for the levels in the transformation of mother germ cells into a mature follicle.



Q.6. What are the events that cause the chromosome number of gametes to go from $2n$, n , and again back to $2n$ during reproduction?

Q.7. How is a primary oocyte different from a secondary oocyte?

Q.8. State the role of the ampullary-isthmic junction in the female reproductive tract.

Q.9. How is polyspermy checked by the zona pellucida of the ovum?

Q.10. What is the significance of LH surge through the menstrual cycle?

Short Answer Type Questions

Q.11. How many spermatozoa does one secondary spermatocyte produce?

b. Where in zygote does the first cleavage division occur?

Q.12. Why does corpus luteum stay active throughout pregnancy and in the absence of fertilization, is active only for 10-12 days?

Q.13. What is foetal ejection reflex? How does it cause parturition?

Q.14. What are the functions of placenta other than its endocrine function?

Q.15. What is the significance of Colostrum during infant growth?

Q.16. What are the different stages of the follicular phase of the menstrual cycle taking place in ovary and uterus?

Q.17. What are ART's? Explain each type with examples.

Q.18. Where was Saheli developed? What is its significance?

Q.19. Explain the various types of contraceptives in detail.

Q.20. Lactational amenorrhea is a contraceptive method. List two advantages.

Q.21. List some important steps for improving the reproductive health standards in India.

Q.22. Explain the process of Megasporogenesis in detail.

Q.23. How does a chasmogamous bisexual flower prevent self-pollination?

Q.24. Is there any difference between apomixis and parthenocarpy? Explain the benefits of each.

Q.25. Explain the term polyembryony. How is it exploited commercially?

SUBJECT: - HINDI

1. पाठ्यक्रम की कोई भी एक कविता याद करके तथा उसका वीडियो बनाकर मुझे व्यक्तिगत प्रेषित करें। (कविता डेढ़ मिनट से पाँच मिनट) (वाचन-कौशल अभ्यास)
2. 'परीक्षा-तनाव के कारण व बचने के उपाय' या 'डिजिटल युग और मैं' में से किसी एक विषय पर रचनात्मक लेख लिखिए। (शब्द-सीमा 120 शब्द)
3. भक्तिन पाठ का नाट्य-रूपांतरण करें। (शब्द सीमा 100 शब्द)

4. 'अभिव्यक्ति और माध्यम' पुस्तक से पाठ संख्या 3, 4 और 5 से पाँच-पाँच बहुविकल्पी प्रश्न और उत्तर करने ।

5. निम्नलिखित में से कोई दो फ़िल्में देखिए और उनसे मिलने वाली पाँच प्रमुख शिक्षाएँ लिखिए :—

i :- <https://youtu.be/gZy4vIGf7MY>

I am kalam

ii :- <https://youtu.be/CPXkijYI9Y0>

Chalk n duster

iii :- <https://youtu.be/epKzi21TRN8>

उम्मीद (लघु फ़िल्म)

iv - <https://youtu.be/OnhZDZXzBz4>

रद्दी लाइब्रेरी (लघु फ़िल्म)

6. पत्रकार कितने प्रकार के होते हैं!? नाम व परिभाषा लिखिए।

7. पाठ्य-पुस्तक में विद्यमान किसी भी कवि/लेखक पर परियोजना तैयार करें । (कवि/लेखक का परिचय, रचनाओं के नाम व रचनाओं का संक्षिप्त परिचय , पुरस्कार, आपका कवि /लेखक के बारे में विचार , उनकी रचना पर टिप्पणी और उन कवि /लेखक का काल्पनिक साक्षात्कार व अन्य यदि कुछ आपको उचित लगे) (A4 साइज़ पेपर में) (कम-कम पच्चीस पृष्ठों में यह कार्य करें ।)

8. अभी तक जो भी पढ़ाया गया है, उसको कम-से कम पाँच बार दोहराएँ। आते ही उसी से प्रश्न पूछे जाएँगे।

9. रेडियो नाटक किसे कहते हैं? संक्षिप्त परिचय उदाहरण सहित ।

10. कला समेकित परियोजना :— पुदुच्चेरी नुक्कड़ नाटक, ग्रामीण संस्कृति एवं उनकी विशेषताएँ (पीपीटी व वीडियो) (Art Integrated Project)

SUBJECT: PHYSICAL EDUCATION

- Make One major Game (Football, Basketball, Athletics, Handball & Badminton_) File with measurement.