SRI GURU HARKRISHAN PUBLIC SCHOOL, DUGRI ROAD, LDH

SUMMER BREAK ASSIGNMENTS (2025-26)

CLASS XII

Dear Parents

Greetings !!!

As already intimated, the Summer Break is scheduled from ***2nd June 2025 till 5th July 2025***. Summer Vacation has always been considered to be the most desirable period looked forward by children; when they can go beyond academics and embark on a journey of fun and adventure by reading books, exercising, meditating, and channelizing one's energy in a positive manner.

The Summer Break Assignments are designed in such a way that the students will learn by doing. The parents are requested to help the students in completing all the Assignments in a neat and clean handwriting. These assignments carry weightage so it is important for everyone to deposit them immediately after the Summer Break gets over.

We wish everyone a wonderful and well deserved Summer Break! May it be filled with relaxation, fun and creating cherished memories.

HAPPY SUMMER BREAK !!!

Regards
Principal

Mathematics Activities

Note:- Do all the Activities in your Lab Manual.

Lab.Activity 1:-Types Of Relations

Objective:- To verify that the relation Rin the set L of all lines in a plane, defined by R = {(l,m):11m} is symmetric but neither reflexive nor transitive.

Lab.Activity 2:- Functions (One- One/Onto)-1

Objective:-To demonstrate a function which is not one-one but is onto.

Lab.Activity 3:- Graph of Inverse Trigonometrical Functions

Objective:-To draw the graph of sinx, using the graph of sin x and demonstrate the concept of mirror reflection (about the line y = x)

Lab.Activity 4:- Calculus (Sketching of Graph)

Objective:- To sketch the graphs of a' and log x, a > 0, a1 and to examine that they are mirror images of each other.

Lab.Activity 5:- Continuity

Objective:- To verify practically that for a function f to be continuous at a given pont x, Ay = If (x + x)-f(x), is arbitrarily small, if Ax is sufficiently small

Lab.Activity 6:- Increasing and Decreasing function

Objective:- To understand the concepts of decreasing and increasing functions.

Lab.Activity 7:- Absolute Maxima and Minima

Objective:- To understand the concepts of absolute maximum and minimum values of a function in a given closed interval through its graph.

Lab.Activity 8:- Application of Maxima and Minima-III

Objective:- To verify that amongst all the rectangles of the same perimeter, the square has the maximum area.

Lab.Activity 9:- Vectors (Distributive Property)

Objective:- To verify geometrically that cx (a+b)=cxa+cxb.

Lab.Activity 10:- Three Dimensional Geometry

Objective:- To locate the points to given coordinates in space, measure the distance between two points in space and then to verify the distance using distance formula.

Lab.Activity 11:- Plane (Shortest Distance)

Objective:- To measure the shortest distance between two skew lines and verify it analytically.

Lab.Activity 12:- Probability

Objective:- To explain the computation of conditional probability of an event A, when event Bhas already occurred by an example of rolling a dice.

WORKSHEET-1

Chapters: 3 MATRICES

Time: 1 hr. Chapter: 4 DETERMINANTS Total Marks = 22

1. If A is a 3×3 matrix and |A| = 8, what is the value of |2A|? [1M]

a) 16 b) 32 c) 64 d) 128

2. Given that A and B are square matrices of the same order, which of the following statements is always true? [1M]

a) $|AB| = |A| + |B|$ b) $|AB| = |A| \times |B|$

c) $|A + B| = |A| + |B|$ d) $|kA| = k|A|$, where k is a scalar

3. If A is a 3×3 matrix and |adj (A)| = 27, what is the value of |A|? [1M]

a) 3 b) 9 c) 27 d) 81

4. For a 3×3 matrix A, if $A^2 = I$ (where I is the identity matrix), what can you conclude about |A|?

a) $|A| = 1$ b) $|A| = -1$ c) $|A| = 0$ d) $|A| = \pm 1$

5. If A is a 2×2 matrix and $|A| = 5$, what is the value of $|\text{adj}(A)|$? [1M]

a) 1/5 b) 5 c) 25 d) 1

6. Given matrices A and B, if AB = 0 (zero matrix) and $|A| \neq 0$, what can you conclude about matrix B?[1M]

a) B is invertible b) B is singular

c) $|B| = 0$ d) Both b and c

7. If A is a 4×4 matrix with $|A| = 16$, what is the value of ? [1M]

a) 1/16 b) 1/4 c) 4 d) 16

8. Given that A and B are 3×3 matrices with $|A| = 2$ and $|B| = 3$, what is the value of $|A\ \text{adj}(B)|$?

a) 6 b) 18 c) 54 d) 162

9. If $\text{adj } A=\begin{bmatrix}1 & 2\\ 1 & 1\end{bmatrix}$ then $A^{-1} =$ _____?

a) $\begin{bmatrix}-1 & -2\\ 1 & -1\end{bmatrix}$ b) $\begin{bmatrix}-1 & -2\\ =1 & -1\end{bmatrix}$

c) $\begin{bmatrix}-1 & 2\\ 1 & -1\end{bmatrix}$ d) $\begin{bmatrix}1 & -2\\ =1 & 1\end{bmatrix}$

10. If $A=\begin{bmatrix}0 & 1\\ 0 & 0\end{bmatrix}$ then $\text{adj}(\text{adj}(A))=$_____?

a) $\begin{bmatrix}1 & 1\\ 0 & 0\end{bmatrix}$ b) $\begin{bmatrix}0 & 1\\ 0 & 1\end{bmatrix}$

c) $\begin{bmatrix}0 & 1\\ 0 & 0\end{bmatrix}$ d) $\begin{bmatrix}0 & 0\\ 0 & 0\end{bmatrix}$

11. If A and B are square matrices of order 3 such that AB = I, where I is the identity matrix, then

[1M]

a) I b) adj(AB) c) |A||B|I d) |AB|I

12. If $A = [a_{ij}]$ is a 3×3 matrix where , then the value of |A| is:

a) 0 b) 1 c) -1 d) 2

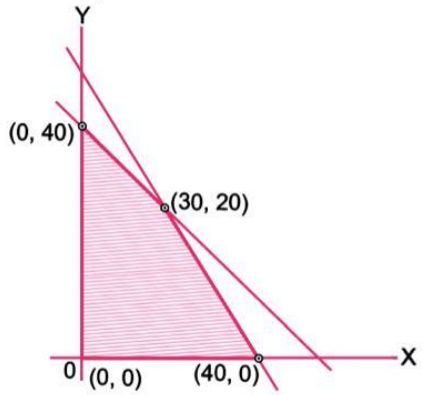
CHAPTER 12 LINEAR PROGRAMMING

SECTION – A

Questions 1 to 10 carry 1 mark each.

1. Corner points of the feasible region for an LPP are (0, 2), (3, 0), (6, 0), (6, 8) and (0, 5). Let F =4x + 6y be the objective function. The minimum value of F occurs at
(a) Only (0, 2)
(b) Only (3, 0)
(c) the mid-point of the line segment joining the points (0, 2) and (3, 0)
(d) any point on the line segment joining the points (0, 2) and (3, 0)

2. Feasible region (shaded) for a LPP is shown in the given figure.
The maximum value of the Z = 0.4x + y is

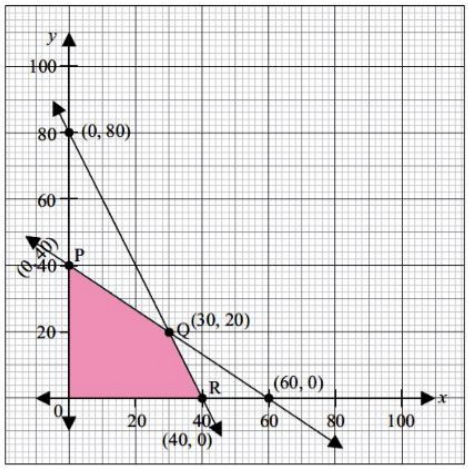


(a) 45 (b) 40 (c) 50 (d) 41

3. A set of values of decision variables that satisfies the linear constraints and non-negativity conditions of an L.P.P. is called its:
(a) Unbounded solution (b) Optimum solution
(c) Feasible solution (d) None of these

4. The corner points of the feasible region determined by the following system of linear inequalities: $2x + y \leq 10$, $x + 3y \leq 15$, $x, y \geq 0$ are (0,0), (5,0), (3,4), (0,5). Let Z= px + qy, where p,q > 0. Condition on p and q so that the maximum of Z occurs at both (3,4) and (0,5) is
(a) p = q (b) p = 2q (c) p = 3q (d) q = 3p

5. For an L.P.P. the objective function is Z = 4x + 3y, and the feasible region determined by a set of constraints (linear inequations) is shown in the graph.



Which one of the following statements is true?

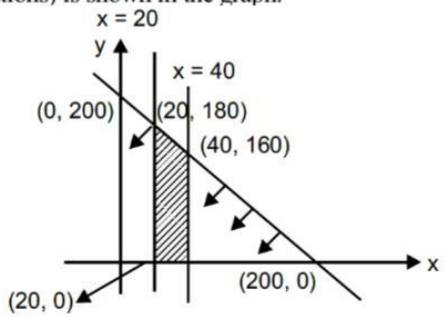
(a) Maximum value of Z is at R. (b) Maximum value of Z is at Q.

(c) Value of Z at R is less than the value at P. (d) Value of Z at Q is less than the value at R.

6. Corner points of the feasible region for an LPP are (0, 3), (1,1) and (3,0). Let Z = px + qy, where p, q > 0, be the objective function. The condition on p and q so that the minimum of Z occurs at (3,0) and (1,1) is

(a) p = q (b) $p \quad \frac{q}{2}$ (c) p = 3q (d) p=q

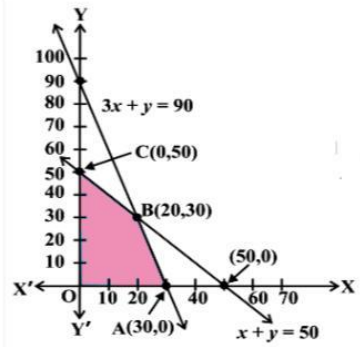
7. For an L.P.P. the objective function is Z = 400x + 300y, and the feasible region determined by a set of constraints (linear inequations) is shown in the graph.



Find the coordinates at which the objective function is maximum.

(a) (20, 0) (b) (40, 0) (c) (40, 160) (d) (20, 180)

8. The corner points of the shaded bounded feasible region of an LPP are (0,0),(30,0),(20,30) and (0,50) as shown in the figure .



The maximum value of the objective function $Z = 4x+y$ is

(a) 120 (b) 130 (c) 140 (d) 150

In the following questions 9 and 10, a statement of assertion (A) is followed by a statement of reason (R). Mark the correct choice as:

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

9. **Assertion (A):** The maximum value of $Z = 5x + 3y$, satisfying the conditions $x \geq 20$, $y \geq 0$ and $5x + 2y \leq 10$, is 15.
   Reason (R): A feasible region may be bounded or unbounded.

10. **Assertion (A):** The maximum value of $Z = x + 3y$. Such that $2x + y \leq 20$, $x + 2y \leq 20$, $x, y \geq 0$ is 30.
    Reason (R): The variables that enter into the problem are called decision variables.

Holidays Homework Class 12

Solve 1 to 5 Comprehension passages From b b c or any book for practice

Write minimum 7 formats of job application

Letter to editor

Notice

Read the chapters thoroughly, flamingo and vistas.And write , the summary , in your words with limit of 150 to 200 On Assignment sheets.(any three summaries)

Frame minimum 10 vocabulary words from the chapters done in class.

HOLIDAYS HOMEWORK

Grade (XII)

Subject - Chemistry

• **Write the following Experiments of CHEMISTRY in your Chemistry practical file (Only on ruled side).**

1. To prepare collodial solution ofStarch.

2. To prepare crystals of FerrousAmmounium Sulphate (Mohr's salt)$FeSO_4.(NH_4)_2SO_4 .6H_2O$.

Quantitative Analysis

3. To prepare M/20 Solution of Mohr 'ssalt and using this solution.determine themolarity and strength of KMnO4.

4. Prepare M/20 Oxalic acid by using itdetermine the molarity and strength of givensolution of KMnO4.

Qualitative Analysis

5. Determination of one cation and oneAnion in a given salt. **(Sample will be sendin class group)**

6. Test for functional groups present inorganic compounds.

Unsaturation, Alcoholic, phenolic,aldehydic, ketonic, carboxylic and aminogroups .

(Sample will be send in class group)

INVESTIGATORY PROJECT - As per C.B.S.E Guidelines

Scientific investigations involving laboratory testing and collecting information from other sources.

Project must cover the following:-

• Cover page

• Certificate

• Acknowledgement

• Index

• Objective of project

• Content

• Experiments

• Bibliography/Webliography

Guidelines for Project :-

1. Project work should be done on A-4 project sheets in project file.

2. Text should be handwritten supported with relevant figures/ pictures/ diagrams etc.

3. Figures /Pictures etc should be on left side.

4. Starting from first page to concluding page , every related information should be presented in order.

5. There should be atleast 10-12 pages in project excluding title (cover page), certificate, acknowledgement, index , bibliography.

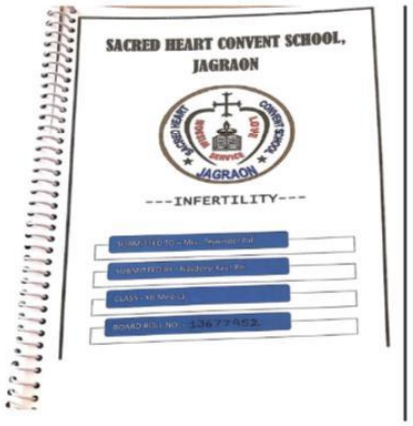
6. Try to incorporate creativity and innovation.

7. Ensure timely submission of project work.

8. Prepare your project file on topic as assigned you according to your **Roll nos.**

Topic	Roll no
Study of common food adulterants in fats, oil, butter, sugar,turmeric powder, chilli powder and pepper.	**1, 16**
Study of presence of oxalate ions in guava fruit at different stages of ripening.	**2 ,17**
Extraction of essential oils present in Saunf (aniseed), Ajwain(carum), Illaichi (cardamom).	**3 , 18**
Chromatography- Paper chromatography	**4 , 19**
Study of quantity of casein present in different samples of Milk.	**5 , 20**
Study of digestion of starch by salivary amylase and effect of pH and temperature on it.	**6 , 21**
Study of effect of Potassium Bisulphite as a food preservative.	**7, 22**
Measuring the amount of an acetic acid in vinegar by titration with an indicator solution.	**8 ,23**
Preparation of Soyabean milk and its comparison with natural milk with respect to curd formation, effect of temperature etc.	**9 ,24**
On Sterlization of water using bleaching powder.	**10 ,25**
Determination of Caffeine in tea samples.	**11 ,26**
Presence of insecticides and pesticides in fruits and vegetables.	**12, 27**
Neutralizing ability of various antacids available in the market.	**13, 28**

Comparative study of the rate of fermentation of following materials: Wheat flour, gram flour, potato flour,carrot juice etc.	**14, 29**
Report on Discovery of cis platin and how it is used as Anti-tumor agent.	**15, 30**



• ***Cover page should be like the sample shared above (add school logo and your schoolname) .***

• ***Project report should be compiled in spiralbinding.***

• ***This project is for your FINAL EXAMS So, KINDLY PREPARE IT WITH MATCHING STANDARDS AND FULL DEDICATION .***

• **REVISE THE CHAPTERS TILL DONE & DO PRACTICE OF NUMERICALS.**

• **SOLVE THE ASSIGNMENTS THAT ALREADY SENT IN CLASS GROUP.**

HOLIDAYS HOMEWORK

Grade (XII)

Subject – Physics

INVESTIGATORY PROJECT - As per C.B.S.E Guidelines

Scientific investigations involving laboratory testing and collecting information from other sources.

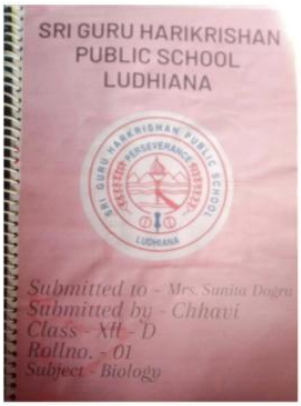
Project must cover the following:-

- **Cover page**
- **Index**
- **Certificate**
- **Acknowledgement**
- **Objective of project**
- **Content**
- **Experiments**
- **Bibliography/Webliography**

Guidelines for Project :-

1. **Project work should be done on A-4 project sheets in project file.**
2. **Text should be handwritten supported with relevant figures/ pictures/ diagrams etc.**
3. **Figures /Pictures etc should be on left side.**
4. **Starting from first page to concluding page , every related information should be presented in order.**
5. **There should be at least 10-12 pages in project excluding title (cover page), certificate, acknowledgement, index , bibliography.**
6. **Try to incorporate creativity and innovation.**
7. **Ensure timely submission of project work after reopening of the school.**
8. **Prepare your project file on topic as assigned below**

Topic	Roll no.s
Transformer	1,11,21
Half wave rectifier	2, 12,22
Full wave rectifier	3,13,23
Capacitor in series and parallel	4,14,24
Ac Generator	5,15,25
Em waves	6,16, 26
Diffraction	7,17 ,
Photoelectric effect	8,27, 18
Study of various factors on which the internal resistance / emf of a cell depends.	9,28,19
Electromagnetic induction	10,29,20
Charging and Discharging of a capacitor.	11,30



- **Cover page should be like the sample shared (add school logo and your school name)**
- **Project report should be compiled in spiral binding.**
- **This project is for your final exams.**

• **Kindly prepare it with full matching standards and full dedication.**

2. **Physics on Screen**

• **"Fact or Fiction?" – Movie Physics Analysis**

• **Task: Watch a sci-fi movie (Interstellar, The Flash, Gravity, Avengers).**

• **Activity: Identify 3 scenes and analyze if the physics shown is real or exaggerated.**

Submission: PPT or short report with scenes/screenshots.

3. **Build Your Own Physics Toy**

• **Options:**

• **Balloon-powered car (Newton's laws)**

• **Simple periscope (light reflection)**

• **Water rocket (pressure)**

• **Electromagnetic induction model**

• **Chandrayaan 3 working model**

• **Or any other…**

Submission: Working model + video/photo + 1-page explanation of principles.

HOLIDAYS HOMEWORK

Grade (XII)

Subject – Biology

INVESTIGATORY PROJECT - As per C.B.S.E Guidelines

Scientific investigations involving laboratory testing and collecting information from other sources.

Project must cover the following:-

• Cover page

• Index

• Certificate

• Acknowledgement

• Objective of project

• Content

• Experiments

• Bibliography/Webliography

Guidelines for Project :-

1. Project work should be done on A-4 project sheets in project file.

2. Text should be handwritten supported with relevant figures/ pictures/ diagrams etc.

3. Figures /Pictures etc should be on left side.

4. Starting from first page to concluding page , every related information should be presented in order.

5. There should be at least 10-12 pages in project excluding title (cover page), certificate, acknowledgement, index , bibliography.

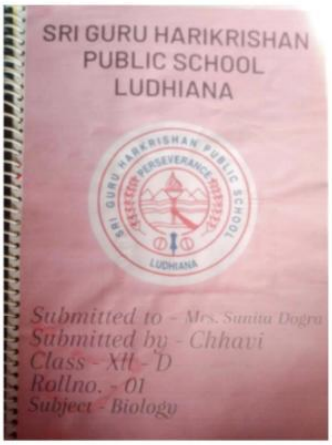
6. Try to incorporate creativity and innovation.

7. Ensure timely submission of project work after reopening of the school.

8. Prepare your project file on topic as assigned below

Topic	Name
Chimerism:introduction,Reasonbehind chimerism discuss some examples.	Naina
Drug abuse	Aarav
Twins	Nishmit Kaur
Pollination	Shubham
Curd and gut health	Bhramjot
Addiction (tea and coffee)non alcoholic drinks	Harjot
“Sugar a sweet enemy”(discuss about use of sugar causing various issues such as autism,nonalcoholic fatty liver etc)	Awanshika
Taboos(Reproductive health)	Bawanpreet Kaur
Vaccine for cancer	Riya
Biomagnification:Presence of insecticides and pesticides in fruits and vegetables.	
Ecological pyramids	Summa
Paleontology:introduction,Howare they formed,types,discusspetoskey as an example	Kiratjot Kaur
Immunisation	Ramandeep Kaur
DNA fingerprinting	
Applications of biotechnology	Ishpreet Singh
Pollination	Prince
Immunity	Harpreet Singh

Medicinal plants and their uses:- Local medicinal plants and their traditional uses	**Paramveer Singh**
Cancer	**Rajveer Singh**



- **Cover page should be like the sample shared (add school logo and your school name)**

- **Project report should be compiled in spiral binding.**

- **This project is for your final exams.**

- **Kindly prepare it with full matching standards and full dedication.**

Task:- Make a 3D model of

- Rotating structure of DNA(deoxyribonucleic acid)

Materials:- Cardboard base,strips , colourfulpaper,glue etc.

You can take help from the link given below:-

https://youtu.be/tU9oGoDVC2Q?si=PSf6HSkzQGuhEBLr

Outcome:- Students will be able to develop observation ,analysis and model-building skills.

Physical Education

Holiday homework

Class -12

Complete your practical notebook

Syllabus-

Practical 1 - Sai khelo India fitness test

Practical 2- Procedure Asanas, benefits and its contradictions for any 2 asanas for each lifestyle diseases

Practical 3 - any one IOA recognised spots/games of choice. Labelled diagram of field and equipment's also mention its rules terminology and skills

Project file -

Roll number - 1-5 Table tennis

Roll number - 6-10 basketball

Roll number - 11 - 15 badminton

Roll number - 16 - 20 Lawn Tennis Roll number - 21 - 25 hockey

Roll number - 26 -30 volleyball

Roll number - 31 - 35 judo

labelled diagram of field and equipments also mention its rule terminology and skills

Holidays Homework Class +2

Subject Music Vocal

Students maintain your project file(Syllabus are

1. The Topic are …

Drut khyal, Vilambit Khayal,

Tarana and Dhamar

2. Taal:

⭐Rupak full laikaries

⭐Jhaptaal with laikaries

3, Tanpura Definition and Structure

Tuning of Tanpura

Complete your notes Syllabus is …

Definition of Alankar, Kan, Murki, Kan and Murki

Granth Sangeet Ratnakar

Life sketch of Ustad Faiyaz khan