



## **Dear Students**

Wishing you a summer vacation filled with peace, tranquility, and the freedom to wander wherever your heart desires. Along with the vacations studies are equally required to stay in touch with. Holiday homework of all the subjects is mentioned along with the instructions and methodology to prepare your project work.

**KINDLY NOTE THE DATE TO SUBMIT YOUR PROJECT WORK: JULY 2'2024.  
HOLIDAY HOMEWORK HAS BEEN UPLOADED ON THE SCHOOL WEBSITE ALSO.**

## **SUBJECT: ENGLISH PROJECT WORK**

### **Instructions:**

Project work should be done in thread cardboard file and in white colored practical pages only a project should have the following outline:

1. Index, Acknowledgement and Certificate
2. Objectives
3. Content about the assigned text
4. Pictures
5. Conclusion
6. Bibliography

### **1) THE LAST LESSON- FREEDOM OF SPEECH AND EXPRESSION (Roll No.1-6)**

- Linguistic chauvinism
- Importance of Language
- Globalization of Language
- Franco-Prussian War
- Historical References of Events wherein linguistic identity was threatened/ snatched

### **2) LOST SPRING-LIFE IN A SLUM (Roll No.7-14)**

- Research and case study of a slum.
- Life of the people in a slum
- Education
- Health and Infrastructure
- Government Initiatives
- Role of youth in the upliftment of the weaker sections of the society
- Comparative Study of Slums
- Slums of yesterday turned to cities of today

### **3) DEEP WATER- PHOBIA (Roll No.15-21)**

- Phobias and fears of people.
- Psychological and emotional impact.
- How to overcome.
- Impact on one's life and society
- Case Study

### **4) RATTRAP-THE STUDY OF CRIME AND CRIMINALS (Roll No.22 -26)**

- Circumstances that lead to crime.
- Case Study
- Corrective Measures

- Impact of Criminal Behaviour on Society
- How to bring them into mainstream.
- Attitude of society towards criminals.

**5) KEEPING QUIET (POEM) (Roll No.27-33)**

- Introduction to Keeping Quiet
- Historical and Cultural Context of Keeping Quiet
- Analysis of the Poem’s themes and Poetic Devices
- The Importance of Silence and Stillness in Contemporary society
- The relevance of ‘Keeping Quiet ’in the 21<sup>st</sup> Century
- Conclusion and reflection on the significance of “Keeping Quiet”

**SUBJECT: PHYSICS PROJECT WORK**

**Instructions:**

1. The project must be done individually.
2. Content should be clear.
3. Note- file should be covered with orange chart paper with proper outer cover containing the school logo and other details.

Under the following heads--

1. Certificate
2. Acknowledgement
3. Index
4. Topic
5. Introduction
6. Content
7. Bibliography

Support your project with pictures.

| S.No. | TOPICS                            | ROLL NO.  |
|-------|-----------------------------------|-----------|
| 1.    | Electromagnetic Induction         | 1 and 2   |
| 2.    | Generators and Transformer        | 3 and 4   |
| 3.    | Capacitors                        | 5 and 6   |
| 4.    | Atom                              | 7 and 8   |
| 5.    | Semiconductors                    | 9 and 10  |
| 6.    | Light and it’s natural phenomenon | 11 and 12 |
| 7.    | Electric cell                     | 13 and 14 |
| 8.    | Magnetic Materials                | 15 and 16 |
| 9.    | Pn junction Diode                 | 17 and 18 |
| 10.   | Kirchoff’sLaws and Potentiometer  | 19 and 20 |
| 11.   | coulomb’s Law and Gauss’Law       | 21 and 22 |
| 12.   | Ohm’s Law and Resistors           | 23 and 24 |

|     |                                 |           |
|-----|---------------------------------|-----------|
| 13. | Interference and diffraction    | 25 and 26 |
| 14. | Radioactivity                   | 27 and 28 |
| 15. | EM waves                        | 29 and 30 |
| 16. | BiotSavert Law and Ampere's Law | 31 and 32 |

### **SUBJECT: CHEMISTRY PROJECT WORK**

Make Investigatory Project on the given topic as per Roll no stated below:

1. To Study the Effect of Fertilizer on Water (**Roll No 01 to 05**)
2. To Study of the Food Adulterants (**Roll No 06 to 10**)
3. Biodiesel: The future of the Fuel (**Roll No 11 to 15**)
4. To Study the Hardness of Water (**Roll No 16 to 20**)
5. Chemicals Affecting the ripening the fruits (**Roll No 21 to 25**)
6. Is Bottled Water more purified than tap Water? (**Roll No 26 to 30**)
7. To Study the Effects of the Acid Rain on Plant Growth (**Roll No 31 to 35**)

**A project should have the following outline:**

1. Index, Acknowledgement and Certificate
2. Objectives
3. Introduction
4. Method & procedure
5. Material and Resources used
6. Observation and Data used
7. Analysis of Data
8. Conclusion
9. Limitations
10. Bibliography

HOLIDAY HOMEWORK

- Note: 1. Project work should be done in thread cardboard file and in practical pages only.**  
**2. Separate project file should be made for each project.**  
**3. No coloured pages should be used for writing the project content.**  
**4. Project file should be well covered with White chart paper and transparent cellophane sheet.**

2. Make project on the given topic as per Roll no stated below:
1. Colligative Properties (**Roll No 01 to 05**)
  2. All name Reactions of Organic Chemistry (**Roll No 06 to 10**)
  3. Electrochemistry (**Roll No 11 to 15**)
  4. The D and F block Elements (**Roll No 16 to 20**)
  5. Biomolecules (**Roll No 21 to 25**)
  6. Coordination Compounds ( **Roll No 26 to 30**)
  7. Chemical Kinetics (**Roll No 31 to 35**)

**A project should have the following outline:**

1. Index, Acknowledgement and Certificate
2. Objectives
3. Introduction
4. Relevent Content.
5. Bibliography

**Note:**

- 1. Project work should be done in thread cardboard file and in practical pages only.**

2. Separate project file should be made for each project.
3. No coloured pages should be used for writing the project content.
4. Project file should be well covered with White chart paper and transparent cellophane sheet.

### **SUBJECT: BIOLOGY PROJECT WORK**

Instructions:

1. The project must be done individually.
2. Content should be clear.
3. Note- file should be covered with green chart paper with proper outer cover containing the school logo and other details.

Under the following heads--

- |                 |                    |
|-----------------|--------------------|
| 1. Certificate  | 2. Acknowledgement |
| 3. Index        | 4. Topic           |
| 5. Introduction | 6. Content         |
| 7. Bibliography |                    |

Support your project with pictures.

| S.No. | NAME OF STUDENTS | TOPICS                                      |
|-------|------------------|---|
| 1.    | Alfisha          | Cancer                                      |
| 2.    | Amreen           | HIV AIDS                                    |
| 3.    | Anushka          | Infertility                                 |
| 4.    | Badal            | Population interactions                     |
| 5.    | Divyansh         | Microbes in human welfare                   |
| 6.    | Himanshu         | DNA fingerprinting                          |
| 7.    | Jiya             | Pollination and it's agents                 |
| 8.    | Mahi             | Application of biotechnology in agriculture |
| 9.    | Mrinal           | Population explosion                        |
| 10.   | Priya            | Mendelian disorders                         |
| 11.   | Sanskriti        | Drug Addiction                              |
| 12.   | Shrishti         | Application of biotechnology in medicine    |
| 13.   | Sofia            | Human evolution                             |
| 14.   | Thinley          | Biodiversity conservation                   |

### **SUBJECT: PHYSICAL EDUCATION PROJECT WORK**

1. Prepare an assignment on Yoga any five asanas.
2. Make a project file on your major Game.
3. **Instructions:**
  1. The project must be done individually.
  2. Content should be clear.
  3. Note- file should be covered with WHITE chart paper with proper outer cover containing the school logo and other details.

Under the following heads--

1. Certificate
2. Acknowledgement

## ASSIGNMENT 1

1. If A is the square matrix of order 3 such that  $|\text{adj}A| = 64$ , find  $|A|$
2. If  $A = \begin{bmatrix} 1 & 2 \\ 4 & 2 \end{bmatrix}$ , then find k if  $|2A| = k|A|$
3. Let P and Q be two matrices of order  $2 \times n$  and  $2 \times p$  respectively. If  $n=p$ , then find The order of  $4P-3Q$ .
4. Find the transpose of the following matrix  
 $\begin{bmatrix} 1 & 2 & -5 \end{bmatrix}$
5. Find the value of x:  $\begin{bmatrix} x & 2 \\ 18 & x \end{bmatrix} = \begin{bmatrix} 6 & 2 \\ 18 & 6 \end{bmatrix}$
6. For What value of x, the matrix  
 $A = \begin{bmatrix} 0 & 1 & -2 \\ -1 & 0 & 3 \\ x & -3 & 0 \end{bmatrix}$  a skew symmetric matrix.

## ASSIGNMENT 2

7. If  $\begin{vmatrix} 2x & 3 \\ -1 & x \end{vmatrix}$ , find the integral value of x
8. Evaluate the following :  $\begin{bmatrix} a & b \\ c & d \end{bmatrix} + \begin{bmatrix} a & b & c \\ b & & c \end{bmatrix}$
9. Find the equation of line joining (1,2) and (3,6) using determinants.
10. If A is a square matrix such that  $A^2 = A$ , Then evaluate  $(i+A)^3 - 7A$

# HOLIDAY HOMEWORK

11. If  $A = \begin{bmatrix} \cos \alpha & -\sin \alpha \\ \sin \alpha & \cos \alpha \end{bmatrix}$ , then for what value of  $\alpha$ , A is identity matrix.

12. Construct a 2x2 matrix whose elements are given by

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

### ASSIGNMENT 3

13. Find the value of  $\tan^{-1}(1) + \cos^{-1}\left(-\frac{1}{2}\right) + \sin^{-1}\left(-\frac{1}{2}\right)$

14. Evaluate  $\sin\left(\frac{\pi}{3} - \sin^{-1}\left(-\frac{1}{2}\right)\right)$

15. Using elementary transformations, find the inverse of the matrix

$$\begin{bmatrix} 0 & 1 & 2 \\ 1 & 2 & 3 \\ 3 & 1 & 1 \end{bmatrix}$$

16. Prove that  $\tan^{-1}\left(\frac{1}{2}\right) + \tan^{-1}\left(\frac{2}{11}\right) = \tan^{-1}\left(\frac{3}{4}\right)$

17. A trust wishes to invest a part of Rs. 10000 of its fund into three investments at a rate of 10%, 12% and 15% per annum respectively. If the total annual income is 1310 and the income from third investment is Rs. 190 more than the combined income from first and second investment. Using matrix method, find the amount to be invested in three types of investment.

18. Evaluate:-

$$\begin{bmatrix} \cos A \cos B & \cos A \sin B & -\sin A \\ -\sin B & \cos B & 0 \\ \sin A \cos B & \sin A \sin B & \cos A \end{bmatrix}$$

### ASSIGNMENT 4

19.  $Z = 13x - 15y$  subject to the constraints:  $x + y \leq 7$ ,  
 $2x - 3y + 6 \geq 0, x \geq 0, y \geq 0$ .

20. A diet is to contain at least 80 units of Vitamin A and 100 units of minerals. Two foods A and B are available, Food A costs Rs. 4 per unit and B costs Rs. 6 per unit. One unit of food contains 3 units of vitamin A and 4 units of minerals. One unit of food B contains 6 units of vitamin A and 3 units of minerals. Formulate this problem as a LPP and find graphically the minimum cost for diet that consists of mixture of these two foods and also meets the minimal nutritional requirements.

**SUBJECT: INFORMATICS PRACTICE PROJECT WORK**

**1. PRACTICAL WORK**

All Students need to prepare the Practical File with the following programs.

1. Create a panda series from a dictionary of values and array.
2. Write a Pandas program to perform arithmetic operations on two Pandas Series.
3. Write a Pandas program to add some data to an existing Series.
4. Write a Pandas program to select the rows where the percentage greater than 70.
5. Write a Pandas program to select the rows where the percentage is between 70 and 90 (inclusive).
6. Write a Pandas program to change the percentage in a given row by the user.
7. Write a Pandas program to join the two given data frames along rows and assign all data.
8. Write a Pandas program to join the two given data frames along with columns and assign all data.
9. Write a Pandas program to append a list of dictionaries or series to an existing DataFrame and display the combined data.
10. Write a Program to select or filter rows from a Data Frame based on values in columns in pandas (Use of Relational and Logical Operators)

**2. PROJECT WORK**

**Make project on the given topics as per the List stated below:**

| S.No | Group Topics          | Student Name   |
|------|-----------------------|--|
| 1    | CarSalesAnalyzer      | 1. Harshit Maurya<br>2. Arsh<br>3. Mohd. Zaidan            |
| 2    | AnalysisOfCrimeRecord | 1. Akshat Bhandari<br>2. Anvi Arora<br>3. Himanshi Chettri |



|    |   |  |
|----|---|--|
| 3  | Analysis of Vegetable Price                             | 1. Divyansh Malik<br>2. Rishabh Mudgal<br>3. Kapish Bhardwaj |
| 4  | Analysis of Olympics Games                              | 1. Himanshu Bhatt<br>2. Parv Gautam<br>3. Daksh Basera       |
| 5  | Analysis of Asiad Games                                 | 1. Shambhavi Tiwari<br>2. Ishmeet Kaur<br>3. Subhangi Sharma |
| 6  | Growth of Population in the state of Uttarakhand.       | 1. Saloni Negi<br>2. Mahi Bhandari<br>3. Alfisha             |
| 7  | <b>Growth of Export and import in India.</b>            | 1. Aadil Ahmed<br>2. Shivam Ranawat<br>3. Phuntsok Gelek     |
| 8  | Analysis of Rise of Global Temp.                        | 1. Arjun Saini<br>2. Aditya Saini<br>3. Suryansh Bacchetti   |
| 9  | Analysis of Electric Vehicle Sales Analyzer             | 1. Mahi Jain<br>2. Neel Karan<br>3. Devansh Singh Sengar     |
| 10 | Analysis of Literacy Rate in India                      | 1. Aditya Gaur<br>2. Ansh Saxena<br>3. Rudra Pant            |
| 11 | Analysis of Change of India Rupee with Foreign Currency | 1. Manthan Vij<br>2. Ibharim<br>3. Akul Agarwal              |