SACRED HEART SCHOOL

Moga, Punjab
Session: 2024-25

Holidays Homework for Academic Year 2025-26

STD: XII

Subject	Topics
Eng I	1. As the Head Boy/Head Girl of your school, you have been given the responsibility of organizing an excursion for the students of classes XI and XII to JIM Corbett National Park. Write a proposal in not more than 150 words stating the steps you would take to successfully organize this excursion. 2. Read an award winning novel or any award winning book and write a review of it (in 400 words) in the prescribed format for book review. **Note:** Attempt both of the given questions. **Instructions:** • Students will write the given project on the assignment sheets. • The work should be neat and legible. There must be an introduction and conclusion of the given assignment(s). • The project must have a face sheet (front page) with the name of the school, title, students' details and name of the subject teacher. • It must contain an acknowledgement sheet (just after the front page) and a bibliography sheet (in the last). • Both of the assignments (English I & English II) must be given in separate transparent files.
Eng II	Dive deep into the themes, characters and symbolic elements of the short story '*The Cookie Lady*'. Analysis of the authors' styles and how he conveyed his messages. (Word Limit 800-850) OR Explore John Donne's sonnet '*Death be Not Psroud'* through analysis of its themes, language, and structure. Consider the historical and cultural context of Donne's writing, including his religious beliefs and the societal attitudes toward death during his time. (Word Limit 800-850) OR *"Shakespeare has no heroes, but only heroines."* How does Shakespeare portray Lady Macbeth as a powerful woman, even within the constraints of the time? What does her character reflect about the women and gender roles in his time? (Word Limit 800-850)
Maths	Instructions □ Select any two projects out of these mentioned topics. □ Each project should be of 12 – 15 pages. □ Projects should be self-made and should not be copied directly from any website or another student, otherwise that student have to recreate the project. □ Student have to prepare the soft copy of their projects and will send via email to their respective subject teachers. □ Students will keep their project safely with them because after vacations, presentation will be done by each student in the class. □ Final marks will be assigned by the teacher on the basis of student's presentation in the class.

Note:- Students need to make 2 projects, 1 from section A compulsorily and 1 from either Section – B or Section –C. A project should be of 12–15 pages.

Projects

Section – A

1. Using a graph, demonstrate a function which is One-one but not onto.
2. Verify the consistency of the system of three Linear equations of two variables and verify the Same graphically. Give its geometrical Interpretation
3. Explain the concepts of increasing and Decreasing functions, using geometrical significance of dy/dx. Illustrate with proper examples.
4. Explain the conditional probability, the theorem Of total probability and the concept of Bayes' Theorem with suitable examples.

Section – B

1. Describe the geometrical interpretation of scalar Triple product and for a given data, find the scalar Triple product.
2. Find the area bounded by a parabola and an Oblique line

Section – C

1. Draw a rough sketch of Cost (C), Average Cost (AC) and Marginal Cost (MC)

Or

Revenue (R), Average Revenue (AR) and Marginal Revenue (MR).

Give their mathematical interpretation using the concept of increasing - decreasing functions and maxima-minima.

2. Draw the scatter diagram for a given data. Use it to draw the lines of best fit and estimate the value of Y when X is given and vice-versa.
3. Using any suitable data, find the minimum cost by applying the concept of Transportation problem.

Phy

Important Guidelines-

1. The student should do only the project Allotted to them
2. Marks will be awarded based on how creatively and effectively you explain your topic by adding animations.
3. Students have to do complete research on the topic.
4. Direct copying of content from the internet sources is strictly prohibited.
5. Later on Students have to give a proper seminar on the related topic.
6. Project work should be hand written.
7. Following are the topics of the project work according to the roll no. of the students.

HOLIDAY HOMEWORK	12^{TH}
SUBJECT	PHYSICS
TIME TO BE SPENT	1 HOUR PER DAY FOR 10 DAYS
WORK SPECIFICATIONS STUDENT MAY OPT FOR ANY ONE OF THESE 3 MENTIONED PROJECT WORKS	1.THEORY BASED PROJECT WORK OR 2.MODEL BASED PROJECT OR 3.INVESTIGATIVE PROJECT(EXPERIMENTAL PROJECT)
MATERIAL REQUIRED	Colourful printed sheets , text book of physics, writing and drawing material, reference books , newsprint , Photographs , Graphs where applicable.
No . of minimum sheets to be used	Between 15 to 20 for theoretical project Between 5 to 10 for model based project Between 10 to 15 in experimental project
GUIDELINES/ INSTRUCTION TO BE FOLLOWED	1. You are required to prepare a technical report formally written , including an abstract, some theoretical discussion, experimental set up , principle , observation, data collection, analysis and discussion of the result , conclusion. You can take daily life examples , 2. The content should be original , it should not be copy paste from internet or your books , you can

	take ideas but formulate them in your own words ideas and present them in your project work. 3. It should be well structured, simple and neat and clean.
EVALUATION	You will be assessed on 1. Conceptual understanding/ clarity 2. Computation if any 3. Your own ideas in that project 4. Presentation.
VIDEO PRESENTATION	STUDENTS Which ever topic has been given to you for the project(theoretical) you all have to make a video lecture of that topic of atleat 15 minutes. In this you have to explain what is your topic all about , what work you have done , your own innovations related to that topic , how that is helpful or harmful for the society.
Sequence of pages	1. School format 2. Certificate 3. Acknowledgement 4. Abstract (what includes in our topic or summary of your project) 5. Introduction 6. Main content (principle of the topic, , construction, structure) 7. Conclusion 8. Biblography.

HOLIDAY HOMEWORK Class 12th **Non medical**

Investigatory Projects

1. Electric charge its history and applications
2. Electric field and Gauss's theorem
3. Electric potential
4. Capacitors
5. Dielectrics and Applications
6. Magnetism and various effects and applications
7. Moving coil galvanometer
8. Earth's magnetism ,its measurement and its applications
9. Ferromagnetism and wide applications of Ferromagnetic materials.
10. Electromagnetic induction and applications
11. AC circuits
12. AC dynamo
13. Electromagnetic waves and applications
14. Total internal reflection and applications
15. Optical fibre and applications
16. Dispersion and applications
17. Microscope ,its magnifications and resolving power with its different types.
18. Particle nature of light
19. Wave nature of matter
20. Interference and applications
21. Young's double slit experiment
22. Diffraction and applications
23. To Study the Charging and Discharging of Capacitor in R-C Circuits
24. Photoelectric effect
25. To Study the Lenz law of Electromagnetic Induction
26. To Study and Analyse the Force of Attraction between the bar magnet and Solenoid
27. To Study the Magnetic Susceptibility of Magnetic Materials
28. To Study the Physics Principles in Medicine
29. Semiconductors and its applications in present world
30. Diode ,History , present and future
31. To Study the Temperature Effect on Resistivity of Semiconductors
32. Huygens principle and applications
33. Spherical lenses and applications
34. Spherical mirrors and applications
35. Rectifiers and applications
36. Eddy currents and applications
37. Photoconductive cells
38. Mutual induction and applications
39. Dielectrics and Applications

40. Ferromagnetism and wide applications of Ferromagnetic materials.
41. . Electromagnetic induction and applications

HOLIDAY HOMEWORK Class 12th Super medical

Investigatory Projects

1. Dielectrics and Applications
2. Ferromagnetism and wide applications of Ferromagnetic materials.
3. Electromagnetic induction and applications
4. AC circuits
5. Electromagnetic waves and applications
6. Total internal reflection and applications
7. Diffraction and applications
8. Photoelectric effect and dual nature of light
9. To Study the Lenz law of Electromagnetic Induction
10. To Study the Physics Principles in Medicine
11. Semiconductors and its applications in present world
12. Huygens principle and applications
13. Eddy currents and applications
14. PN junction diode and its wide applications
15. Motion sensing lights and fans to save electricity
16. To Study the Light Dependent Resistor
17. Analytical Study of Drift Velocity in the Low Dimensional Device
18. Nucleus composition and Nuclear fusion, fission
19. Semiconductor devices and its advancement in modern world.
20. Diode ,History , present and future
21. 21.To Study the Temperature Effect on Resistivity of Semiconductors
22. Huygens principle and applications
23. 23 . Spherical lenses and applications
24. 24. Photoelectric effect
25. To Study the Lenz law of Electromagnetic Induction
26. To Study and Analyse the Force of Attraction between the bar magnet and Solenoid
27. To Study the Magnetic Susceptibility of Magnetic Materials
28. To Study the Physics Principles in Medicine
29. Semiconductors and its applications in present world
30. Diode ,History , present and future
31. To Study the Temperature Effect on Resistivity of Semiconductors
32. Huygens principle and applications
33. Spherical lenses and applications
34. Spherical mirrors and applications
35. Rectifiers and applications
36. Eddy currents and applications
37. Photoconductive cells
38. Mutual induction and applications
39. Dielectrics and Applications

HOLIDAY HOMEWORK Class 12th **Medical**

1. Dielectrics and Applications
2. Ferromagnetism and wide applications of Ferromagnetic materials.
3. Electromagnetic induction and applications
4. AC circuits
5. Electromagnetic waves and applications
6. Total internal reflection and applications
7. Diffraction and applications
8. Photoelectric effect and dual nature of light
9. To Study the Lenz law of Electromagnetic Induction
10. To Study the Physics Principles in Medicine
11. Semiconductors and its applications in present world
12. Huygens principle and applications
13. Eddy currents and applications
14. PN junction diode and its wide applications
15. Motion sensing lights and fans to save electricity
16. To Study the Light Dependent Resistor
17. Analytical Study of Drift Velocity in the Low Dimensional Device
18. Nucleus composition and Nuclear fusion, fission
19. Semiconductor devices and its advancement in modern world.
20. Diode ,History , present and future

21. 21.To Study the Temperature Effect on Resistivity of Semiconductors
22. Huygens principle and applications
23. 23 . Spherical lenses and applications
24. 24. Photoelectric effect
25. To Study the Lenz law of Electromagnetic Induction
26. To Study and Analyse the Force of Attraction between the bar magnet and Solenoid
27. To Study the Magnetic Susceptibility of Magnetic Materials
28. To Study the Physics Principles in Medicine
29. Semiconductors and its applications in present world
30. Diode ,History , present and future
31. To Study the Temperature Effect on Resistivity of Semiconductors

Chem

PROJECT WORK FOR GRADE XII
NON –MEDICAL / SUPER MEDICAL / MEDICAL

Students are required to complete the assigned project/s as per the following and submit the project file within 02 days of reopening of school after summer vacations.

Project Work – 10 Marks
The project work will be assessed by a Visiting Examiner appointed locally and approved by the Council.

The candidate is to creatively execute **one** project as per allotment.

ALL THE STUDENTS TO MAINTAIN THE FOLLOWING IN THE PROJECT REPORT:
(i) COVER PAGE as per the format
https://docs.google.com/document/d/1AcAX_n3cTyXxsM6XW2lvVY1mZf5EB6_I/edit?usp=sharing&ouid=101729596719507134753&rtpof=true&sd=true
(ii) INDEX
DETAILS OF THE PROJECT WITH PAGE NUMBER
(iii) Students acknowledgement
https://docs.google.com/document/d/1AcAX_n3cTyXxsM6XW2lvVY1mZf5EB6_I/edit?usp=sharing&ouid=101729596719507134753&rtpof=true&sd=true

(iv) Certificate
https://docs.google.com/document/d/1AcAX_n3cTyXxsM6XW2lvVY1mZf5EB6_I/edit?usp=sharing&ouid=101729596719507134753&rtpof=true&sd=true
(v) Abstract
Introduction / purpose / objective: (What do you aim to achieve with this project ?)
Scope: what are included and what are excluded in the project.

Limitations of the project.

What is the context?

(vii) Contents matter in detail
(viii) Analysis/ material aid (graph, data, structure, pie charts, histograms, diagrams, etc.)
(ix) Presentation and data analysis
(x) Conclusion
(xi) Bibliography/ references

Allotment of Projects as mentioned below:
ALLOTTMENT OF PROJECTS CHEMISTRY XII SUP-MEDICAL

Roll No.	Name	Class	Topic
1	AKSHDEEP SINGH BHALLA	XII-SM	Water Quality Contamination Study in Your Region: Investigate pollutants, sources, and their impact on local water qualit Propose solutions for cleaner water.
2	ANMOL JI	XII-SM	Surface Chemistry Applications in Real Life and Industries: Explore phenomena like adsorption, emulsions, and colloids. Understand how surface chemistry affects everyday products and processes.
3	ANMOLDEEP SINGH CHAHAL	XII-SM	Role of Coordination Compounds in Daily Life: Study complex compounds and their applications. Discuss coordination chemistry in medicine, catalysis, and materials.
4	ANMOLPREET SINGH GILL	XII-SM	Chemistry in Food Processing: Analyze chemical reactions during food production. Highlight safety, preservation, and flavor enhancement.

	5	AVNEET KAUR	XII-SM	Nuclear Energy: Benefits and Limitations:
	6	AVNEET KAUR SIDHU	XII-SM	Organic Chemistry's Role in Pharmaceuticals: Explore drug synthesis, structure-activity relationships. Understand natural product chemistry.
	7	BHAVYA KAMRA	XII-SM	Nanoparticles: Scope in Industries and Daily Life: Study nanomaterials' properties and applications. Discuss nanotechnology's impact on medicine, electronics, and energy.
	8	DARSHPREET KAUR	XII-SM	Chemistry's Role in Cancer Treatment: Investigate drug design, targeting, and delivery. Explore chemotherapy and immunotherapy.
	9	DEEPREHRAAS SINGH JANDU	XII-SM	Soft Drinks' Impact on School Students: Analyze health effects, ingredients, and alternatives. Consider sugar content and additives.
	10	DEVDUTT SHARMA	XII-SM	Discuss nuclear reactions, power generation, and safety. Evaluate pros and cons of nuclear energy.
	11	GURLEEN KAUR	XII-SM	**Mineral Water Components and Their Significance**: Analyze the composition of mineral water. Highlight the importance of minerals for health.
	12	GURSIMRAN SINGH	XII-SM	**Decoding Plastic Recycling Codes**: Investigate the meaning and significance of plastic recycling symbols. Explore the impact of recycling on the environment.
	13	HARJOT SINGH KAMBO	XII-SM	**Polymers: Types, Examples, and Applications**: Study different polymer classifications (e.g., addition, condensation). Discuss real-world applications of polymers (e.g., plastics, fibers).
	14	HARKIRAT KAUR KHOSA	XII-SM	**Rocket Propellants: Composition and Properties**: Investigate propellant chemistry. Analyze factors affecting rocket performance.
	15	HARLEEN KAUR	XII-SM	**Catalysts in Commercial Chemical Reactions**: Explore catalyst types (e.g., homogeneous, heterogeneous). Discuss their role in industrial processes.
	16	HARLEEN KAUR	XII-SM	**Dyes: Types, Preparation, and Characteristics**: Study different dye classes (e.g., azo, anthraquinone). Understand dye synthesis and color properties.
	17	HARNOORPREET SINGH	XII-SM	**Plastics' Societal and Global Impact**: Examine how plastics have transformed daily life. Discuss environmental challenges posed by plastic waste.
	18	HARVARINDER SINGH GILL	XII-SM	**Ancient Indian Medicines and Medicinal Plants**: Research traditional herbal remedies. Explore the chemistry behind their effectiveness.
	19	HEEVENJOT KAUR BAWA	XII-SM	**Green Fertilizers: Necessity and Benefits**: Investigate eco-friendly fertilizers.

			Discuss their role in sustainable agriculture.
20	ISHPREET SINGH DEVGAN	XII-SM	**Chemistry in Forensic Science**: Explore chemical techniques used in crime scene investigation. Understand forensic analysis and evidence collection.
21	JASHANVEER KAUR GILL	XII-SM	**Green Chemistry for Pollution Reduction**: Explore eco-friendly chemical processes and their impact on the environment. Investigate sustainable alternatives to traditional methods.
22	JASMEEN KAUR	XII-SM	**AI in Chemical Industries**: Explore artificial intelligence applications. Discuss optimization, process control, and safety.
23	JASNOOR KAUR AULAKH	XII-SM	**Understanding Carbon Footprints**: Analyze environmental impact and carbon emissions. Discuss strategies for reducing footprints.
24	KAMALPREET KAUR GILL	XII-SM	**Waste-to-Income Conversion Methods**: Find innovative ways to utilize municipal waste. Consider recycling, upcycling, or energy generation.
25	KARANBIR SINGH	XII-SM	**Biotechnology's Significance**: Explore genetic engineering, bioprocessing, and applications. Understand biotechnological advancements.
26	KIRATPREET KAUR	XII-SM	**Hydrogen Economy Exploration**: Investigate hydrogen as a clean energy carrier. Discuss its applications and challenges.
27	MANPREET KAUR	XII-SM	**Stubble Burning Solutions**: Address agricultural residue burning. Explore alternatives to reduce air pollution during crop residue disposal.
28	MANREET KAUR GILL	XII-SM	**E-Waste Management Strategies**: Study electronic waste disposal and recycling. • Propose efficient methods for handling e-waste.
29	MANTAJ SINGH	XII-SM	**Innovative Air Pollution Monitoring**: Develop novel technologies to measure air quality. Consider sensor-based solutions and data analysis.
30	NAVNEEK KAUR SANGHA	XII-SM	**Production of Personal Care Products**: Create soap, nail polish, boot polish, varnish, nail polish remover, shampoo, and scents. Understand the chemistry behind each product.
31	NAVREET KAUR	XII-SM	**AI in Chemical Industries**: Implement artificial intelligence for process optimization and safety.
32	NOORJIT KAUR DHUNNA	XII-SM	**Green Chemistry**: Focuses on designing environmentally friendly chemical

			processes. Aims to reduce pollution, minimize waste, and use sustainable resources.
33	RAMINDER KAUR	XII-SM	**Carbon Footprints**: Analyze environmental impact and reduce carbon emissions.
34	RISHITA GHAI	XII-SM	**Municipal Waste Conversion**: Find ways to turn waste into income-generating resources.
35	SEHAJVEER SINGH JASSAL	XII-SM	**Biotechnology Importance**: Explore genetic engineering, bioprocessing, and medical applications.
36	SUKHMAN KAUR	XII-SM	**Hydrogen Economy**: Study hydrogen as a clean energy carrier. Discuss applications and challenges.
37	SUKHNAAD KAUR	XII-SM	**Green Fertilizers: Necessity and Benefits**: Investigate eco-friendly fertilizers. Discuss their role in sustainable agriculture.
38	TAJVEER KAUR	XII-SM	**Chemistry in Forensic Science**: Explore chemical techniques used in crime scene investigation. Understand forensic analysis and evidence collection.
39	YADVEER KAUR	XII-SM	**Green Chemistry for Pollution Reduction**: Explore eco-friendly chemical processes and their impact on the environment. Investigate sustainable alternatives to traditional methods.

ALLOTTMENT OF PROJECTS CHEMISTRY XII MEDICAL

Roll No.	Name	Class	Topic
1	AVNEET KAUR	XII-MED	Water Quality Contamination Study in Your Region: Investigate pollutants, sources, and their impact on local water quality. Propose solutions for cleaner water.
2	AVNEET KAUR SANDHU	XII-MED	Surface Chemistry Applications in Real Life and Industries: Explore phenomena like adsorption, emulsions, and colloids. Understand how surface chemistry affects everyday products and processes.
3	DIVYA	XII-MED	Role of Coordination Compounds in Daily Life: Study complex compounds and their applications. Discuss coordination chemistry in medicine, catalysis, and materials.

	4	EKAMNOOR KAUR	XII-MED	Chemistry in Food Processing: Analyze chemical reactions during food production. Highlight safety, preservation, and flavor enhancement.	
	5	GURLEEN KAUR	XII-MED	Nuclear Energy: Benefits and Limitations:	
	6	GURSIMRAN KAUR GILL	XII-MED	Organic Chemistry's Role in Pharmaceuticals: Explore drug synthesis, structure-activity relationships. Understand natural product chemistry.	
	7	HARSIMRAN KAUR	XII-MED	Nanoparticles: Scope in Industries and Daily Life: Study nanomaterials' properties and applications. Discuss nanotechnology's impact on medicine, electronics, and energy.	
	8	JEMEDEEN KAUR	XII-MED	Chemistry's Role in Cancer Treatment: Investigate drug design, targeting, and delivery. Explore chemotherapy and immunotherapy.	
	9	KARAMPREET KAUR GILL	XII-MED	Soft Drinks' Impact on School Students: Analyze health effects, ingredients, and alternatives. Consider sugar content and additives.	
	10	KARMANDIP SINGH	XII-MED	Discuss nuclear reactions, power generation, and safety. Evaluate pros and cons of nuclear energy.	
	11	KHUSHI KATARIA	XII-MED	**Mineral Water Components and Their Significance**: Analyze the composition of mineral water. Highlight the importance of minerals for health.	
	12	KINISH	XII-MED	**Decoding Plastic Recycling Codes**: Investigate the meaning and significance of plastic recycling symbols. Explore the impact of recycling on the environment.	
	13	LAIBA SAIFI	XII-MED	**Polymers: Types, Examples, and Applications**: Study different polymer classifications (e.g., addition, condensation). Discuss real-world applications of polymers (e.g., plastics, fibers).	
	14	LOVEJEET KAUR GILL	XII-MED	**Rocket Propellants: Composition and Properties**: Investigate propellant chemistry. Analyze factors affecting rocket performance.	

15	MANNATPREET KAUR	XII-MED	**Catalysts in Commercial Chemical Reactions**: Explore catalyst types (e.g., homogeneous, heterogeneous). Discuss their role in industrial processes.
16	MEHTAB SINGH SIDHU	XII-MED	**Dyes: Types, Preparation, and Characteristics**: Study different dye classes (e.g., azo, anthraquinone). Understand dye synthesis and color properties.
17	MUSKAN KALRA	XII-MED	**Plastics' Societal and Global Impact**: Examine how plastics have transformed daily life. Discuss environmental challenges posed by plastic waste.
18	NAMAN KANSAL	XII-MED	**Ancient Indian Medicines and Medicinal Plants**: Research traditional herbal remedies. Explore the chemistry behind their effectiveness.
19	NAVDEEP KAUR TOOR	XII-MED	**Green Fertilizers: Necessity and Benefits**: Investigate eco-friendly fertilizers. Discuss their role in sustainable agriculture.
20	NAVJOT KAUR	XII-MED	**Chemistry in Forensic Science**: Explore chemical techniques used in crime scene investigation. Understand forensic analysis and evidence collection.
21	NIHARIKA GUPTA	XII-MED	**Green Chemistry for Pollution Reduction**: Explore eco-friendly chemical processes and their impact on the environment. Investigate sustainable alternatives to traditional methods.
22	PRABHNOOR KAUR	XII-MED	**AI in Chemical Industries**: Explore artificial intelligence applications. Discuss optimization, process control, and safety.
23	RAGHAV CHATURVEDI	XII-MED	**Understanding Carbon Footprints**: Analyze environmental impact and carbon emissions. Discuss strategies for reducing footprints.
24	RAVINDER SINGH GILL	XII-MED	**Waste-to-Income Conversion Methods**: Find innovative ways to utilize municipal waste. Consider recycling, upcycling, or energy generation.
25	RAVNEET KAUR	XII-MED	**Biotechnology's Significance**: Explore genetic engineering, bioprocessing, and applications. Understand biotechnological advancements.
26	RAVNEET KAUR	XII-MED	**Hydrogen Economy Exploration**: Investigate hydrogen as a clean energy carrier. Discuss its applications and challenges.
27	SAKSHAM KUMAR NARANG	XII-MED	**Stubble Burning Solutions**: Address agricultural residue burning. Explore alternatives to reduce air pollution during crop residue disposal.
28	SUKHLEEN KAUR	XII-MED	**E-Waste Management Strategies**: Study electronic waste disposal and recycling. Propose efficient methods for handling e-waste.
29	SUKHMEET SINGH SRAN	XII-MED	**Innovative Air Pollution Monitoring**: Develop novel technologies to measure air quality.

			Consider sensor-based solutions and data analysis.
30	SUPINDERJEET KAUR	XII-MED	**Production of Personal Care Products**: Create soap, nail polish, boot polish, varnish, nail polish remover, shampoo, and scents. Understand the chemistry behind each product.
31	VARINDERJEET KAUR BHULLAR	XII-MED	**AI in Chemical Industries**: Implement artificial intelligence for process optimization and safety.

ALLOTTMENT OF PROJECTS CHEMISTRY XII NON-MEDICAL

Roll No.	Name	Class	Topic
1	AMANAT KAUR	XII NM	Water Quality Contamination Study in Your Region: Investigate pollutants, sources, and their impact on local water quality. Propose solutions for cleaner water.
2	ANMOLPREET SINGH	XII NM	Surface Chemistry Applications in Real Life and Industries: Explore phenomena like adsorption, emulsions, and colloids. Understand how surface chemistry affects everyday products a processes.
3	ARSHDEEP SINGH GILL	XII NM	Role of Coordination Compounds in Daily Life: Study complex compounds and their applications. Discuss coordination chemistry in medicine, catalysis, and mat
4	ASHMEET SINGH DED	XII NM	Chemistry in Food Processing: Analyze chemical reactions during food production. Highlight safety, preservation, and flavor enhancement.
5	EKNOOR SINGH SAGGU	XII NM	Nuclear Energy: Benefits and Limitations:
6	GURBINDER SINGH JHIOUT	XII NM	Organic Chemistry's Role in Pharmaceuticals: Explore drug synthesis, structure-activity relationships. Understand natural product chemistry.
7	GURINDER SINGH KHOSA	XII NM	Nanoparticles: Scope in Industries and Daily Life: Study nanomaterials' properties and applications. Discuss nanotechnology's impact on medicine, electronics, and energy.
8	GURMOHIT SINGH	XII NM	Chemistry's Role in Cancer Treatment: Investigate drug design, targeting, and delivery. Explore chemotherapy and immunotherapy.
9	GURPARVEEN KAUR SAINI	XII NM	Soft Drinks' Impact on School Students: Analyze health effects, ingredients, and alternatives. Consider sugar content and additives.
10	GURSAHIB SINGH DHALIWAL	XII NM	Discuss nuclear reactions, power generation, and safety. Evaluate pros and cons of nuclear energy.
11	GURSHOBIT SINGH	XII NM	**Mineral Water Components and Their Significance**: Analyze the composition of mineral water. Highlight the importance of minerals for health.
12	GURSIMRAN SINGH GHATORA	XII NM	**Decoding Plastic Recycling Codes**: Investigate the meaning and significance of plastic recycling symbols. Explore the impact of recycling on the environment.
13	GURSUKHNOOR SINGH AULAKH	XII NM	**Polymers: Types, Examples, and Applications**: Study different polymer classifications (e.g., addition, condensation). Discuss real-world applications of polymers (e.g., plastics, fibers).

14	HARBIR SINGH AULAKH	XII NM	**Rocket Propellants: Composition and Properties**: Investigate propellant chemistry. Analyze factors affecting rocket performance.	
15	HARKAMAL SINGH SIDHU	XII NM	**Catalysts in Commercial Chemical Reactions**: Explore catalyst types (e.g., homogeneous, heterogeneous). Discuss their role in industrial processes.	
16	HARNOOR KAUR	XII NM	**Dyes: Types, Preparation, and Characteristics**: Study different dye classes (e.g., azo, anthraquinone). Understand dye synthesis and color properties.	
17	HARSH THAMAN	XII NM	**Plastics' Societal and Global Impact**: Examine how plastics have transformed daily life. Discuss environmental challenges posed by plastic waste.	
18	HITESH	XII NM	**Ancient Indian Medicines and Medicinal Plants**: Research traditional herbal remedies. Explore the chemistry behind their effectiveness.	
19	JAIPAL SINGH	XII NM	**Green Fertilizers: Necessity and Benefits**: Investigate eco-friendly fertilizers. Discuss their role in sustainable agriculture.	
20	JANVI	XII NM	**Chemistry in Forensic Science**: Explore chemical techniques used in crime scene investigation. Understand forensic analysis and evidence collection.	
21	JASKARAN SINGH	XII NM	**Green Chemistry for Pollution Reduction**: Explore eco-friendly chemical processes and their impact on the environment. Investigate sustainable alternatives to traditional methods.	
22	JASKEERAT SINGH	XII NM	**AI in Chemical Industries**: Explore artificial intelligence applications. Discuss optimization, process control, and safety.	
23	JASKIRANPREET KAUR BAWA	XII NM	**Understanding Carbon Footprints**: Analyze environmental impact and carbon emissions. Discuss strategies for reducing footprints.	
24	JUJHAR SINGH BRAR	XII NM	**Waste-to-Income Conversion Methods**: Find innovative ways to utilize municipal waste. Consider recycling, upcycling, or energy generation.	
25	KARANBIR SINGH	XII NM	**Biotechnology's Significance**: Explore genetic engineering, bioprocessing, and applications. Understand biotechnological advancements.	
26	KETAN JHANJI	XII NM	**Hydrogen Economy Exploration**: Investigate hydrogen as a clean energy carrier. Discuss its applications and challenges.	
27	MAHEEP KAUR	XII NM	**Stubble Burning Solutions**: Address agricultural residue burning. Explore alternatives to reduce air pollution during crop residue disposal.	
28	MANJOT SINGH RAI	XII NM	**E-Waste Management Strategies**: Study electronic waste disposal and recycling. Propose efficient methods for handling e-waste.	
29	MANROOP SINGH BAMBRAH	XII NM	**Innovative Air Pollution Monitoring**: Develop novel technologies to measure air quality. Consider sensor-based solutions and data analysis.	

	30	MANTAJVEER KAUR GILL	XII NM	**Production of Personal Care Products**: Create soap, nail polish, boot polish, varnish, nail polish remover, shampoo, and scents. Understand the chemistry behind each product.
	31	MANVEER SINGH	XII NM	**AI in Chemical Industries**: Implement artificial intelligence for process optimization and safety.
	32	NAVDEEP SINGH	XII NM	**Green Chemistry**: Focuses on designing environmentally friendly chemical processes. Aims to reduce pollution, minimize waste, and use sustainable resources.
	33	NISHAN SINGH BRAR	XII NM	**Carbon Footprints**: Analyze environmental impact and reduce carbon emissions.
	34	NIYATI BANSAL	XII NM	**Municipal Waste Conversion**: Find ways to turn waste into income-generating resources.
	35	PRATHAM	XII NM	**Biotechnology Importance**: Explore genetic engineering, bioprocessing, and medical applications.
	36	PUSHPREET SINGH GILL	XII NM	**Hydrogen Economy**: Study hydrogen as a clean energy carrier. Discuss applications and challenges.
	37	RAGHAVDEEP GOYAL	XII NM	**Green Fertilizers: Necessity and Benefits**: Investigate eco-friendly fertilizers. Discuss their role in sustainable agriculture.
	38	RAJDEEP SINGH	XII NM	**Chemistry in Forensic Science**: Explore chemical techniques used in crime scene investigation. Understand forensic analysis and evidence collection.
	39	SATUTI SYAL	XII NM	**Green Chemistry for Pollution Reduction**: Explore eco-friendly chemical processes and their impact on the environme Investigate sustainable alternatives to traditional methods.
	40	SEHAJ SANDHU	XII NM	Surface Chemistry Applications in Real Life and Industries: Explore phenomena like adsorption, emulsions, and colloids. Understand how surface chemistry affects everyday products a processes.
	41	TAVLEEN KAUR SIDHU	XII NM	Role of Coordination Compounds in Daily Life: Study complex compounds and their applications. Discuss coordination chemistry in medicine, catalysis, and mat

Bio

Std: XII Med

Complete the following Investigatory projects as per given instructions.

S.No	Roll No	Topic

1.	1 to 5	Finger printing and DNA Finger Printing
2.	6 to 10	rDNA technology and GMO
3.	11 to 15	Non Biodegradable Pllutants and Plastics
4.	16 to 20	Air Pollution and its control
5.	21 to 25	Natural and Manmade Ecosystem
6.	26 to 31	Sewage treatment and Biogas plant

Std: XII SM

Complete the following Investigatory projects as per given instructions.

S.No	Roll No	Topic
1.	1 to 7	Finger printing and DNA Finger Printing
2.	8 to 14	rDNA technology and GMO
3.	14 to 21	Non Biodegradable Pllutants and Plastics
4.	22 to 28	Air Pollution and its control
5.	29 to 34	Natural and Manmade Ecosystem
6.	35 to 39	Sewage treatment and Biogas plant

History

Summer vacation Project work – The second World War (1939 to 1945) – causes, course, consequences, strategies and tactics.

Instructions:

- Must be **handwritten** and neatly presented.

Include:

1. **Title Page** (Topic name, student name, class, section, Admission number, Submitted to etc.)
2. **Acknowledgement**
3. **Index**
4. **Main Content** – *Minimum 2000 words*
5. **Bibliography**

- Use **own words**; **no plagiarism**.
- Add **10+ relevant pictures** with captions.
- Be ready for **viva questions**.
- Maintain **clean handwriting and layout**.

Geo

Topic: Area development of a multipurpose river valley project – impact on the region. (*Self-explanatory)*

Instructions:

- Must be **handwritten** and neatly presented.

Include:

6. **Title Page** (Topic name, student name, class, section, Admission number, Submitted to etc.)
7. **Acknowledgement**
8. **Index**
9. **Main Content** – *Minimum 15 pages*
10. **Bibliography**

- Use **own words**; **no plagiarism**.
- Add **10+ relevant pictures** with captions.
- Be ready for **viva questions**.
- Maintain **clean handwriting and layout**.

Pol. Sci

Project work / Internal Assessment (12th) Political Science

Summer vacation Project work – Judicial Activism – two case studies in which the Judiciary has safeguarded the environment or human rights.

Instructions:

- Must be **handwritten** and neatly presented.

Include:

1. **Title Page** (Topic name, student name, class, section, Admission number, Submitted to

	etc.) 2. **Acknowledgement** 3. **Index** 4. **Main Content** – *Minimum 2000 words.* 5. **Bibliography** • Use **own words**; **no plagiarism**. • Add **10+ relevant pictures** with captions. • Be ready for **viva questions**. • Maintain **clean handwriting and layout**.
Comp	**Question 1** (a) Given the Boolean function: F (A,B,C,D) =Σ(0, 1, 2, 3,4,6,7,11,13,14,15) (i) Reduce the above expression by using 4 - variable K-Map , showing the various groups (i.e; octal , quads and pairs). (ii) Draw the Logic gate diagram of the reduced expression. Assume that the variable and their complements available as inputs. (b) Given the Boolean function: F (A,B,C,D) =π(2,3,4, 5, 6, 7, 10, 13, 14, 15) (i) Reduce the above expression by using 4 - variable K-Map , showing the various groups (i.e; octal , quads and pairs). (ii) Draw the Logic gate diagram of the reduced expression. Assume that the variable and their complements available as inputs. **Question 2** Given the Boolean function's **F (A,B,C,D) = Σ(1,2,3,5,6,7,8,9,10,14)** (i) Reduce the above expression by using 4 - variable K-Map, showing the various groups (i.e; octal , quads and pairs). **[4]** (ii) Draw the Logic gate diagram of the reduced expression. Assume that the variableand their complements are available as inputs. **[1]** Given the Boolean function's **F (A,B,C,D) =π(0,2,4,5,6,8,10,12,13,14).** (i) Reduce the above expression by using 4 - variable K-Map , showing the various groups (i.e; octal , quads and pairs). **[4]** (ii) Draw the Logic gate diagram of the reduced expression. Assume that the variableand their complements are available as inputs. **[1]** **Question 3** The Past Pupil Association of Graphic Era University Computer Science Department is organizing a reunion function at the campus. The invitation card is to be issued to a person if – □ The person is an ex – student of the department and had passed out in 2011. OR □ The person is not an ex- student of the department but passed out from the university in 2011 and has made a contribution of Rs. 5000. The inputs are : E : The person is an ex student of the department. U : The person is not an ex student of the department, but a student of the same university. P : The person passed out in 2011. S : The person contributes Rs. 5000. [1 indicates yes and 0 indicates no in all cases] Output:- I : Denotes the invitation card is issued. a) Draw the truth tables for the inputs and outputs given above and write the SOP expression for E(I,U,P,S). **[5]** b) Reduce I(E,U,P,S) USING Karnaugh's map. Draw the logic gate diagram for the reduced expression for I(E,U,P,S) using AND, OR gates. You may use gates with 2 or more inputs. Assume that variables and their complements are available as inputs. **[5]** **Question 4** A person is allowed to travel in a reserved coach of the train, if he/she satisfies the criteria given below:

- The person has a valid reservation ticket and a valid ID proof.

OR

- **T**he person does not have a valid reservation ticket, but holds a valid pass issued by the Railway department with a valid ID proof.

OR

- The person is a disabled person and holds a valid pass issued by the Railway department along with a valid ID proof.

The inputs are:

INPUTS

R The person has a valid reservation ticket.
P The person holds a valid pass issued by the Railway department.
D The person has a valid ID proof.
H The person is a disabled person.
(In all the above cases 1 indicates yes and 0indicatesno).

Output : T – Denotes allowed to travel (1 indicates yes and 0 indicates no in all the cases)

(a) Draw the truth table for the inputs and outputs given above and write the POS expression for T(R, P, D, H).

(b) Reduce T(R, P, D, H) using Karnaugh map.

Draw the logic gate diagram for the reduced POS expression for T(R, P, D, H) using only NOR gates. You may use gates with two or more inputs. Assume that the variable and their complements are available as inputs.

Question 5

A simple encryption system uses a shifting process ti hide a message. The value of the shift can be in the range of 1 to 26. For example a shift of 7 means that A=U, B=V, C=W, etc. i.e.

Text : A B C D E F G H I J K L M N O P Q R S T U V W X Y Z
Code : U V W X Y Z A B C D E F G H I J K L M N O P Q R S T

First an extra space is added to the end of the string. To make things a little more difficult, spaces within the original text are replaced with QQ before the text is encrypted. Double Q(QQ) was selected because no English word ends in Q or contains QQ.

Additionally the coded message is printed in blocks of sixcharacters seprated by a spaces. The last block might not contain six characters. Write a program that takes the coded text (less than 100 characters), the shift value and prints the decoded original text. Your program must reject any non valid values for shift and display an error message “INVALID SHIFT VALUE”. Assume all characters are upper-case. Test your program for the following data and some data that you have coded, using the rules given above:

SAMPLE DATA:

INPUT:
CODED TEXT: UHINBY LKKQCH HYLKK
SHIFT : 7
OUTPUT
DECODED TEXT : ANOTHER WINNER

INPUT:
CODED TEXT: RUIJGG EVGGBK SAGG
SHIFT : 11
OUTPUT
DECODED TEXT : BEST OF LUCK

INPUT:
CODED TEXT: DKSMMW NAMMUK QMM
SHIFT : 29
OUTPUT
INVALID SHIFT VALUE

Question 6

Design a program to accept a day number (between 1 and 366), year (in 4 digits) from the user to generate and display the corresponding date. Also accept N (1<=N<=100) from the user to compute and display the future date corresponding to N days after the generated date. Display an error message if the value of the day number, year and N are not within the limit or not according to the condition specified.

Test your program for the following data and some random data.

1. Example :

Day NUMBER : 233
YEAR : 2008
DATE AFTER(N): 17

OUTPUT
20TH AUGUST 2008
DATE AFTER 17 DAYS : 6TH SEPTEMBER 2008

2. Example :

DAY NUMBER : 360
YEAR : 2008
DATE AFTER(N): 45

OUTPUT
20TH AUGUST 2008
DATE AFTER 17 DAYS : 8TH FEBRUARY 2009

Question 7

A wondrous square is an n by n grid which fulfills the following conditions:
1) It contains integers from 1 to n2, where each integer appears only once.
2) The sum of integers in any row or column must add up to 0.5 x n x $(n^2 + 1)$
For e.g. the following grid is a wondrous square where the sum of each row or column is 65 when n= 5

17	24	1	8	15
23	5	7	14	16
4	6	13	20	22
10	12	19	21	3
11	18	25	2	9

Write a program to read n($2 <= n <= 10$) and the values stored in these n by n cells and output if the grid represents a wondrous square or not. Also output all the prime numbers in the grid along with their row index and column index as shown in the output. A natural is said to be prime if it has exactly two divisors. E.g. 2, 3, 5, 7, 11 .....
The first element of the given grid i.e. 17 is stored at row index 0 and column index 0 and the next element in the row i.e. 24 is stored at row index 0 and column index 1.
Test your program for the following data and some random data.
Sample Data:

Input:
N = 4

16	15	1	2
6	4	10	14
9	8	12	5
3	7	11	13

Output:
Yes it represents a wondrous square.

Prime	Row Index	Column Index
2	0	3
3	3	0
5	2	3
7	3	1
11	3	2
13	3	3

Input :
N = 3

1	2	4
3	7	5
6	9	6

Output :
Not a wondrous square.

Prime	Row Index	Column Index
2	0	0
2	1	1

Question 8

PPT on the topic assigned below (any three)

- **(i)** Model on full Adder
- **(ii)** Model on Octal to Binary Encoder (8 to 3 Encoder)
- **(iii)** Model on Decimal to BCD Encoder
- **(iv)** Model on Hexadecimal to Binary Encoder
- **(v)** Model on 3-to-8 Decoder
- **(vi)** Model on 4-to-16 Decoder
- **(vii)** Model on 4-to-16 Decoder
- **(viii)** Model on 8 to 1 Multiplexer (3 select lines)
- **(ix)** Model 16 to 1 Multiplexer (4 select lines)
- **(x)** Derived Gate
- **(xi)** Model on Half Adder

Note: A*ll the answers should consist of the programs in either Bluej environment or any program environment with Java as the base. Each program should be written using variable descriptions such that the logic of the program is clearly depicted.*

Creative Video Making

Objective:

Create a short, fun, and meaningful video on a topic of your choice from the provided list (or your own idea with teacher approval). This project helps you build creativity, confidence, and communication skills.

Instructions:

1. **Choose Your Topic**
   – Select a topic from the suggested list or think of your own idea and get it approved by your teacher/parent.
2. **Plan Your Video**
   – Write a short script or outline of what you will say or show.
   – Decide if you need any props, costumes, drawings, or family help.
3. **Video Duration**
   – Keep the video between 1 to 3 minutes long.
4. **Be Creative!**
   – You can act, narrate, draw, sing, make a news show, do an experiment, or even make a mini movie!
5. **Speak Clearly**
   – Use English or your native language (as instructed by your teacher). Make sure your voice is clear and loud enough.
6. **Stay Safe & Respectful**
   – Always ask for permission before recording others. Don't include personal or private information. Use safe and positive content only.
7. **Submission Guidelines**
   – Submit your video in MP4 format (or any format as told by the teacher).
   – Name your file like this: YourName_Class_Topic.mp4
   – Submit via email, Google Drive link, pen drive, or the school portal (as instructed).

Tips for Success:

- Practice before recording.
- Keep the camera steady (use a stand or a helper).
- Record in a quiet and well-lit place.
- Watch your video before submitting to make sure everything is okay.

List of Topics

1. **A Day in the Life of a Historical Figure**
   – Dress up and act as a famous personality (like Gandhi, Einstein, or Kalpana Chawla).
2. **Science Magic Tricks**
   – Simple experiments explained with scientific reasoning.
3. **Math in Real Life**
   – Show how math is used in shopping, cooking, sports, etc.
4. **How I Recycle at Home**
   – Demonstrate eco-friendly practices.
5. **Book Review with a Twist**
   – Act out a scene from your favorite book.
6. **Stop-Motion Animation**
   – Use toys or paper cut-outs to create a mini-story.
7. **Homemade News Show**

	– Present school or local news as a news anchor. 8. **"If I Were…" Series** – If I were the Prime Minister, a teacher, a superhero, etc. 9. **My Dream Vacation (Imaginary)** – Use props or drawings to describe a dream place. 10. **Time Capsule Message to My Future Self** 11. **Say No to Plastic – Here's How** – Demonstrate alternatives to plastic at home. 12. **Be Kind Campaign** – Share small acts of kindness students did or suggest. 13. **Why Voting Matters (For Older Students)** – A simplified explanation of elections and democracy. 14. **My Talent Show** – Dance, sing, draw, code – whatever they're proud of. 15. **My Mini Startup Idea** – Pitch a fun product or service as a "young entrepreneur". 16. **My Biggest Lesson This Year** – Share a personal experience or challenge and what they learned from it. 17. **Gratitude Jar** – A video about things they're thankful for, with visuals or drawings. 18. **My Role Model and Why** – Talk about someone who inspires them (can be a family member, celebrity, or teacher). 19. **Invent a New Gadget** – Describe or sketch an imaginary invention to solve a real-world problem. 20. **Life on Another Planet** – Create a fictional story or news report from Mars, Jupiter, etc. 21. **If Animals Could Talk** – A fun skit imagining a conversation with a pet or wild animal. 22. **Local Heroes of My Area** – Feature a community helper like a shopkeeper, doctor, or sanitation worker. 23. **My Kitchen Chemistry** – Cooking something simple and explaining the science behind it. 24. **Recreate a Scene from a Movie or Book** – With costumes or props at home. 25. **How I Stay Safe Online** – Tips on digital responsibility for kids. **Need Help?** For any assistance or in case of difficulty, please contact your Subject Teacher
Economics	Project Work: Prepare a report on the Composition of GDP in India. Report must comprise of the following details with relevant data and pictures: (I): Introduction to GDP (II):Three Sectors of Economy-Primary, Secondary, Tertiary (III):Contribution of Primary Sector to GDP and economy (IV):Contribution of Secondary Sector to GDP and economy (V):Contribution of Tertiary Sector to GDP and economy (VI):Changes in the composition of GDP over the last 10 years (VII):Causes of rapid increase in Tertiary Sector (VIII):Prospects and Opportunities

Prepared by **Approved bys**