



MPVM GANGA GURUKULAM
HOLIDAY HOME WORK SESSION – (2022-23)
CLASS – XII CHEMISTRY

A. ART INTEGRATION PROJECT AIM:

To study the different resources of biochemical and minerals found in Uttar Pradesh and Meghalaya.

Topic covered:

1. Natural resources of biochemical
2. Natural resources of minerals
3. Economic importance of both biochemical and minerals in Indian GDP/or Indian economy.
4. Uses of biochemical in home remedies found in UP and Meghalaya.

Note: Project must contain drawn or pasted colour pictures of resources, raw minerals/biochemical resources, graphs of data of import/export/development of resources or finished product/mines or production plant, etc.

B. Investigatory project

Every student has to prepare an investigatory project from any one of the listed below topics or any other topic related to chemistry –

1. Study of the presence of oxalate ions in guava fruit at different stages of ripening.
2. Study the quantity of casein present in different samples of milk.
3. Preparation of soybean milk and its comparison with natural milk with respect to curd formation, the effect of temperature, etc.
4. Study of the effect of Potassium Bisulphate as a food preservative under various conditions (temperature, concentration, time, etc.)
5. Study of digestion of starch by salivary amylase and effect of pH and temperature on it. Comparative study of the rate of fermentation of the following materials: wheat flour, gram flour, potato juice, carrot juice, etc.
6. Extraction of essential oils present in Saunf (aniseed), Ajwain (carum), Illaichi (cardamom).
7. Study of common food adulterants in fat, oil, butter, sugar, turmeric powder, chilli powder and pepper.
8. Sterilization of water using bleaching powder
9. Analysis of fertilizer
10. Chemistry in black and white photography

11. Presence of oxalate ions in guava fruit and different stages of ripening
12. Effect of Potassium Bisulphate as a food preservative
13. Quantity of the presence of casein in different samples of milk
14. Extraction of various essential oils present in Ajwain (Carum), Illaichi (Cardamom) and Saunf (Fennel Seeds)
15. Nano-gold for Cancer Therapy
16. Effects of Dye on different types of fabric
17. Comparative study of the rate of fermentation in the following substances- potato juice, wheat flour, carrot juice, gram flour, etc.
18. Common food adulterants in fat, butter, oil, turmeric powder, pepper, chilli powder, sugar, etc.
19. Measuring solubility of saturated solutions
20. Measure the amount of acetic acid in vinegar
21. Determination of contents in cold drinks
22. Removal of alcohol from the body through Esterification
23. Compare the rate of evaporation of water
24. Check the ions present in a toothpaste
25. Water concentration and texture
26. Study the effects of metal coupling on the rate of corrosions
27. Effects of voltage and concentration
28. Effect of heat on vitamin C in tomatoes
29. Removal of natural pigments by the interaction of oxygen and UV light
30. Biodiesel formation
31. Determining the amount of phosphate in detergents
32. Preparation of Potash Alum
33. Variation of conductance with temperature in electrolytes
34. Measurement of the diffusion coefficient in liquids
35. Preparation of soya bean milk
36. Determining caffeine in tea samples
37. Catalytic decomposition
38. Presence of pesticides and insecticide in fruits and vegetables
39. Properties of alpha, beta and gamma rays
40. Digestion of starch by salivary amylase
41. Invisible Ink: Modeling A Molecular Switch
42. Alka-Seltzer Rocket Race
43. The Visible Spectra of Soda Pops
44. Green Chemistry: Bio-Diesel and Bio-Petrol
45. Rate of Evaporation of Different Liquids
46. Red Cabbage pH paper
47. Nanoparticle Stained Glass
48. Photolithography
49. Antibacterial Silver

50. To Determine Ignition Property of Potassium Nitrate
51. Setting Of Mixture of Cement with Sand, Time and Fly Ash
52. The Neutralizing Ability of Antacid Tablets
53. Investigating the Strength of Paper
54. Optimal Temperature for the Decomposition
55. Luminescent Silole Nanoparticles for Chromium (VI) Detection
56. Dyeing of Wool, Silk and Cotton in Malachite Green
57. Effect Of Sodium Carbonate On Foaming Capacity Of A Soap
58. Discoveries in the Field Of Chemistry
59. Which Road Deicer Corrodes Steel the Most?
60. Extraction of Nicotine Sulphate from Samples of Cigarettes
61. Investigation Of Foaming Capacity Of Different Washing Soap
62. Comparing Lactose Percentage between Whole Milk and Powdered Milk

C. Write a note on –

1. Faraday laws of electrolysis
2. Nernst equation
3. Colligative properties.