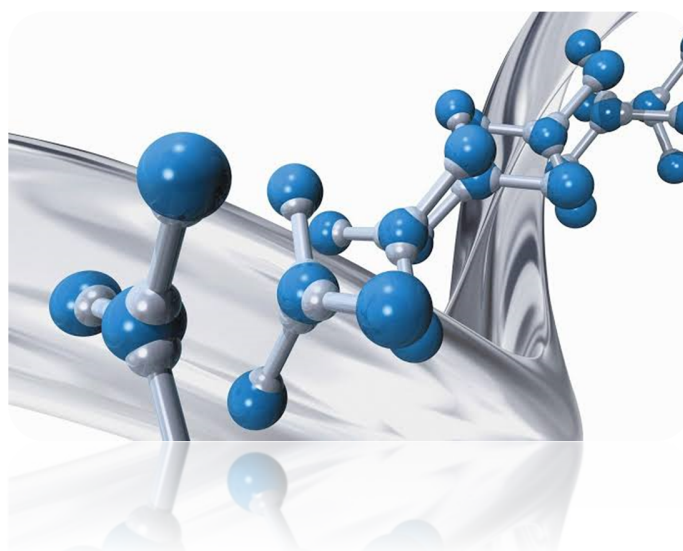


[LOYOLA COLLEGE KUNKURI]



[Annual Report-2017-18]

[Department Of Chemistry]



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"Department of Chemistry"

We are surrounded everyday by Chemistry. So what role does Chemistry really play in everyday life . Science has much discipline. Chemistry is one of them. It is one of the basic or fundamental sciences. And the knowledge of Chemistry is often called the central science because it is vital in the science of Physics and Biology. Chemical and their study famously known as Chemistry is an integrate part of life. It would be very interesting to understand a few things taking into account that we never have the time or patience to look upon it with this view. there is nothing without Chemistry everything we do in this subject and chemical reaction take when we breath, eat, and drink. We use chemical everyday and perform chemical reactions without thinking much about them. Chemistry is important because everything we do in chemistry. Even our body is made up of chemical.

Hence, Chemistry is inevitable from anything one does. It help to understand the composition, structure and changes of matters. It is a wide ranging science which is basically concerned with matter at the atomic and molecular scale. The important facts are synthesis, structure, microscopic, mechanisms properties, analysis and transformation of all types materials. Does a good Chemistry degree opens the door to inexpensive choice of careers and won't be diminished over time so it will remain a promising career part always.

The Chemistry Laboratory is designed to support and illustrate chemical concepts studied in the lecture portion of the course as well as to introduce important laboratory technique and encourage analytic thinking. the laboratory equipment refers to the various tools and equipment used by scientists working in the laboratory.

Vision

To become an institute of academic excellence.

Mission

- Impart quality education along with industrial exposure.
- To undertake research activities relevant to industrial and professional needs.
- Promote entrepreneurship and value added education that is socially relevant with economic benefits.

Chemistry Lab

Chemistry is the scientific discipline involved with compounds composed of atoms, elements and molecules combinations of atoms their composition, structure, properties, behavior and changes they undergo during a reaction with other compounds Chemistry addresses topics such as how atoms and molecule interact via chemical bonds to form new chemical compounds. There are 4 type of chemical bond: covalent bonds in which compound share one or more electron.

Chemistry panels are groups of tests that are routinely ordered to determine a person's general health status. They help evaluate, for example; the body's electrolytes balance and or the status of several major body organs. The tests are performed on a blood sample usually drawn from a vein in the arm.

Chemistry is also the study of matters compositions structures and properties. Matter is essentially anything in the world that takes up space and has mass. Chemistry is sometimes called "the central science", because it bridges physics with other natural science, such as Geology and Biology.

The science that systematically studies the composition, properties and activity of organic and inorganic substance and various elementary forms of matter.

Physical Chemistry combines Chemistry with physics, Physical Chemists Study how matter and energy interact. Inorganic Chemistry studies materials such as metals and gases that do not have carbon as part of their makeup.

DEPARTMENT OF CHEMISTRY INSTRUMENTS

S.NO.	INSTRUMENT NAME	NUMBER
1	DIGITAL SPECTROPHOTOMETER	1
2	MELTING POINT APPARATUS	1
3	ELECTRICAL WEIGHT BOX	1
4	DIGITAL CONDUCTIVITYMETER	1
5	H ₂ S GAS APPARATUS	2
6	DISTILATION APPARATUS	1
7	AUTO-CUT-OFF DEVICE	1
8	ELECTRIC BURNER	2
9	PHYSICAL BALANCE	2
10	WATER BATH	2



GLASS & OTHER APPARATUS-

S. No.	Glass Apparatus	S.No.	Other
01	Beaker(500,250,100ml)	01	Tripod stand
02	Conical Flask(500,250,100ml)	02	Water bath
03	Burette	03	Starch indicator
04	Test tube	04	Filter paper
05	Measuring cylinder	05	Stop watch
06	Watch glass	06	Brush
07	Round Bottom flask	07	Test tube stand
08	Reagent bottle	08	Burette stand
09	viscometer	09	Spatula
10	Rod	10	Tripod stand
11	Cuvette	11	Desecrator
12	Chromatography Jar	12	Forceps
13	Stalagnometer	13	Test tube holder
14	China dish	14	Burner
15	Thermometer	15	Capillary tube
16	Dropper	16	Firefox

Contacts of communication

Designation	Name	Mo.No.
Asst. Professor	Mr. Rakesh Sahu	7000644015
Asst. Professor	Miss.Neha kerketta	9644085087
Asst. Professor	Mr. Ramsagar Bhagat	-
Lab Assistant	Rashmi gupta	-

Departmental Information

Details of programs offered by the department:

Program Level	Course	Duration in months	Intra Qualification	Medium of Instruction	No. of students admitted
U.G.	B.Sc.	36	12th	Hindi /English	349

Teaching Faculty

Name	Paper-I	Paper-II	Paper-III
Chandra Kindo	✓	✓	-
Rinki kumari jaiswal	-	✓	✓

Lab assistant

Name	Rashmi Gupta
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Student

No. of student in year wise- 2017-18

B.Sc.-I	B.Sc.-II	B.Sc.-III	Total
169	87	93	349

No. of outgoing students in year wise- 2017-18

B.Sc.-III	<u>93</u>
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- **Framework**

- **Classes:** Admission of new students started from 01st July. And classes were beginning from next date of admission. And they get aware of schedule and different activities of the laboratory and syllabus also.
- **Lectures:** Lectures are used to convey information, history background, and theories. Lectures are used to expose the students to contemporary issues and the need for life- long learning in the appropriate societal context.
- **Class presentation:** Presentation are given to illustrate ideas and concept and also seminar given by students from effectively communicate.
- **Remedial classes:** The remedial class help the students and developing better understanding of the subject and clarifying their doubts that could not be taken during lecture and problem solving abilities.
- **Lab experimental work:** Laboratory work demonstrates how theory of Inorganic, Organic, and physical chemistry can be verified by experiments through interpretation of results.

- **Seminar**- In final, second and first year student have seminar in their curriculum. The students have select a recent and innovative topic and present in front of seminar coordinates department faculty and their class students. The seminar presentation assessed based on:
 - Topic selection
 - Presentation
 - Report preparation
- **Model & Assignments(B.Sc.-I,II,III)Years are submitted**
- **Subject details**

Class	Paper-I	Paper-II	Paper-III
B.Sc.-I	Inorganic Chemistry	Organic Chemistry	Physical chemistry
B.Sc.-II	Inorganic Chemistry	Organic Chemistry	Physical chemistry
B.Sc.-III	Inorganic Chemistry	Organic Chemistry	Physical chemistry

File Description

Test series

Day/time	B.Sc.-I
15/08/2017	UNIT TEST-01
25/09/2017	UNIT TEST-02
16/12/2017	UNIT TEST-03
23/1/2018	UNIT TEST-04
16/2/2018	UNIT TEST-05

Day/time	B.Sc.-II
22/08/2017	UNIT TEST-01
20/09/2017	UNIT TEST-02
10/12/2017	UNIT TEST-03
02/02/2018	UNIT TEST-04
18/02/2018	UNIT TEST-05

Day/time	B.Sc.-III
18/08/2017	UNIT TEST-01
22/09/2017	UNIT TEST-02
11/12/2017	UNIT TEST-03
15/02/2018	UNIT TEST-04
19/02/2018	UNIT TEST-05

- **Question paper(B.Sc.-I,II,III) Year**
- **Model exam-(10-/01/2017-28/01/2017)**

Practical exam

Date	Year
23/02/2018	B.Sc.-I
24/02/2018	B.Sc.-II
24/02/2018	B.Sc.-III

Teaching / learning process

The following are the various student centric methods to enhance.

Course delivery methods

- Lectures
- Class presentations
- Tutorials
- Lab experimental work
- Written assignments & Model
- Seminar
- Guest lecture

CHEMICAL –LIST(2017-2018)

LOYOLA COLLEGE KUNKURI
DEPARTMENT OF CHEMISTRY
SESSION 2017-2018

S.N.	Chemical Name - 09/10/2017	Quantity	Price	Amount
1	Ignition Tube	04 Pak	312	78.00
2	Glass Dropper	04 Pak	720	180.00
3	Ethanol	500 ml x 3	1035	345.00
4	n-Butanol	500 ml	372	372.00
5	Acetone	500 ml x 2	630	115.00
6	Ethyl Methyl Ketone	500 ml	236	236.00
7	Filter paper	10 Pak	480	48.00
8	Glass Rod	24 P.C.	840	210.00
9	PH Tablet	01 Pak	448	448.00
10	Petrollium Ether	500 ml x 2	1170	585.00
11	Spachulla	24 P.C.	576	24.00
12	What man Filter Paper	2 Pak	6600	3300.00
13	Silica Gel	250 g.m.	375	375.00
14	Coil For Distillation Apparatus	01 P.C.	4200	4200.00
			TOTAL-17994.00	

S.N.	Chemical Name - 06/12/2017	Quantity	Price	Amount
1	Silver Nitrate	25	7250	7250.00
2	Copper metal turning	500 g.m.	2240	2240
3	Sodium Hydrogen Phosphate	500 g.m.	400	400
4	Measuring Flask (1000 ml)	01 P.c.	1455	1455
5	Measuring Flask (500 ml)	02 P.c.	994	497.00
6	Distillation Flask 5 lit	01 P.c.	6120	6120
7	Oxalic Acid	500 g.m.	427	427
8	Hydrogen peroxide	500ml	392	392
9	lead Acetate	500gm	728	728
10	Test tube Brush	36p.c	434	434
			TOTAL-20440	
			GRAND-TOTAL-38434.00	

EXPERIMENT-LIST - (B.Sc.-I,II,III) year-:

LOYOLA COLLEGE KUNKURI
DEPARTMENT OF CHEMISTRY

Session-2017-2018

HEAD OF DEPARTMENT	-	RAKESH SAHU
ASST.PROF.	-	NEHA KERKETTA
ASST.PROF.	-	RAMSAGER BHAGAT
LAB . TECH.	-	RASHMI GUPTA

BSC 1ST YEAR

-
- 1 . To Determine the Percentage Composition of a Binary Mixture By **Viscosity Method** .
 - 2 . To Determine of **Surface Tension** By Drop Number Method .
 - 3 . Determination of Melting Point of Various Organic Compound. (**Naphthaline, Benzoic acid , Urea, Succinic acid, Cinnamic acid, Salycilic acid**)
 - 4 . Determination of Boiling Point of Some Organic Compound. (**Ethanol, Cyclohexane, Toluene, Benzene, Distilled water.**)
 - 5 . To Identify Two Acid and Two Base Radicals in an Unknown Given Inorganic Compound . (**Ferric Chloride Barium Carbonate**)
 - 6 . To Identify Two Acid and Two Base Radicals in an Unknown Given Inorganic Compound . (**Nickle Shulphate , Ammonium Chloride**)
 - 7 . To Identify Two Acid and Two Base Radicals in an Unknown Given Inorganic Compound . (**Calcium Bromide , Aluminium Shulphate**)
 - 8 . To Identify Two Acid and Two Base Radicals in an Unknown Given Inorganic Compound . (**Lead Acetate , Manganese Chloride**)

9 . To Identify Two Acid and Two Base Radicals in an Unknown Given Inorganic Compound .

(Silver Sulfate ,Calcium Carbonate)

10 . To Determine the Element and Functional Group in the Unknown Given Organic Compound

.(Alpha Naphthol)

10 . To Determine the Element and Functional Group in the Unknown Given Organic Compound

.(Glucose)

11 . To Determine the Element and Functional Group in the Unknown Given Organic Compound

.(Ethyl Alcohol)

12. To Determine the Element and Functional Group in the Unknown Given Organic Compound

.(Acetone)

13 . To Determine the Element and Functional Group in the Unknown Given Organic Compound

.(Nitrobenzene)

S.No.	Requirement	Amount
1	Beaker	Nil
2	Tripod stand	Nil
3	Test-tube stand	Nil
4	Funnel	Nil
5	Filter paper	48.00
6	Water bath	Nil
7	Burner	Nil
8	Test- tube	Nil
9	Ignition tube	78.00
10	Red Litmus paper	Nil
11	Watch glass	Nil
12	Brush	144.00
13	Conical Flask	Nil
14	Round bottom flask	Nil
15	China-dish	Nil
16	Blue-Litmus Paper	65.00
17	PH-Paper	Nil
18	Holder	Nil
19	Thermometer	Nil
20	Dropper	30.00
21	Spatula	24.00

22	Viscometer	Nil
23	Stalagmometer	Nil
24	Holder	Nil
25	Glass-Rod	35.00
26	Measuring Flask (1000ml)	1455.00
27	Measuring Flask (500ml)	994.00
28	Whatman Filter Paper(42 No)	3300.00

S.No.	Chemical	Amount
1	Lead Acetate	728.00
2	Potassium Chromate	Nil
3	Manganese Dioxide	Nil
4	Ethanol	345.00
5	Oxalic acid	427.00
6	Potassium dichromate	Nil
7	Copper sulphate	Nil
8	Con. Sulphuric acid	Nil
9	Con. Hydrochloric acid	Nil
10	Con. Nitric acid	Nil
11	Acetone	315.00
12	Methyl Orange	Nil
13	Naphthalene	Nil
14	Bromine Water	Nil
15	Benzoic Acid	Nil
16	Urea	Nil
17	Succinic Acid	Nil
18	Sodium Hydroxide	Nil
19	Cerric Ammonium Nitrate	Nil
20	Ferric chloride	Nil
21	Alpha Napthol	Nil
22	Acetic Acid	Nil
23	Barium Carbonate	Nil
24	Toluene	Nil
25	Ferrus Shulphate	Nil
26	Potassium Iodide	Nil
27	Nessler's Reagent	Nil
28	Ammonium Chloride	Nil
29	Calcium Bromide	Nil
30	Aluminium Sulphate	Nil
31	Ferrous Sulphide Stics	Nil
32	Manganese Chloride	Nil
33	Glucose	Nil

34	Nitrobenzene	Nil
35	Distilled Water	Nil
36	Cinnemic Acid	Nil
37	Salicylic Acid	Nil
38	Silver Sulphate	Nil
39	Calcium Carbonate	Nil
40	Piece of Sodium	Nil

S.no	instrument	Amount
1	Melting Point Apparatus	Nil
2	H ₂ s Gas Apparatus	Nil
3	Distillation Apparatus	Nil

LOYOLA COLLEGE KUNKURI

DEPARTMENT OF CHEMISTRY

SESSION-2017-2018

HEAD OF DEPARTMENT	-	RAKESH SAHU
ASST.PROFF.	-	NEHA KERKETTA
ASST.PROFF.	-	RAMSAGER BHAGAT
LAB . TECH.	-	RASHMI GUPTA

B.SC- II YEAR

-
1. Determination of Acetic acid in The Commercial **Vinegar Using NaOH.**
 2. To prepare **Green Leaf Pigment.**
 3. Separation of a Mixture of Phenylalanine And Glycerin By Ascending **Paper Chromatography.**
 4. To Determination the Amount of Base in **Ant – Acid Tablet Using Hcl.**
 5. Determination The Amount of Copper By the use of **Sodium Theo sulphate.**
 6. Determination of The Transition Temperature $MnCl_2 \cdot 4H_2O$ or $SrBr_2 \cdot 2H_2O$ Of **Thermometric Method.**
 7. To Determine the Functional Group And Specific Group in the Given Compound. (**Acetone**)
 8. To Determine the Functional Group And Specific Group in the Given Compound. (**Oxalic Acid**)
 9. To Determine the Functional Group And Specific Group in the Given Compound. (**Glucose**)
 10. To Determine the Functional Group And Specific Group in the Given Compound. (**Aniline**)
 11. To Determine the Functional Group And Specific Group in the Given Compound. (**Nitrobenzene**)
 12. To Determine the Functional Group And Specific Group in the Given Compound. (**Urea**)

13. To Determine the Functional Group And Specific Group in the Given Compound. (**Methyl Alcohol**)
14. To Determine the Functional Group And Specific Group in the Given Compound. (**Benzene**)
15. To Determine the Functional Group And Specific Group in the Given Compound. (**Benzoic Acid**)

S.No.	Requirement	Amount
1	Beaker	Nil
2	Tripod stand	Nil
3	Test-tube stand	Nil
4	Funnel	Nil
5	Filter paper	48.00
6	Water bath	Nil
7	Burner	Nil
8	Test- tube	Nil
9	Ignition tube	78.00
10	Red Litmus paper	Nil
11	Watch glass	Nil
12	Brush	144.00
13	Conical Flask	Nil
14	Round bottom flask	Nil
15	China-dish	Nil
16	Dropper	30.00
17	Blue Litmus Paper	Nil
18	Holder	Nil
19	Capillary tube	Nil
20	Thermometer	Nil
21	Burette	Nil
22	Pipette	Nil
23	Spatula	24.00
24	Glass-Rod	35.00
25	Measuring Flask (1000ml)	1455.00
26	Measuring Flask (500ml)	994.00

S.No.	Chemical	Amount
1	Potassium Chromate	Nil
2	Copper Sulphate	Nil
3	Con. Ammonia	Nil
4	Ethanol	400.00
5	Oxalic acid	427.00

6	Potassium dichromate	Nil
7	Silica-gel	375.00
8	Con. Sulphuric acid	Nil
9	Con. Hydrochloric acid	Nil
10	Con. Nitric acid	Nil
11	Acetone	315.00
12	Ferric Chloride	Nil
13	Phenol	Nil
14	Bromine water	Nil
15	Aniline	Nil
16	Glucose	Nil
17	Nitrobenzene	Nil
18	Sodium hydroxide	Nil
19	Cerric ammonium nitrate	Nil
20	Ferric chloride	Nil
21	Alpha naphthol	Nil
22	Methanol	Nil
23	Cupper Turning	2240.00
24	2,4 Dinitrophenyl Hydrazine	Nil
25	Benzene	Nil
26	Ethyl-Methyl Ketone	236.00
27	Benzoic Acid	Nil
28	Urea	Nil
29	Piece of Sodium	

S.no	INSTRUMENT NAME	AMOUNT
1	Distillation Apparatus	Nil

LOYOLA COLLEGE KUNKURI
DEPARTMENT OF CHEMISTRY

SESSION 2017-2018

HEAD OF DEPARTMENT - RAKESH SAHU
ASST.PROFF. - NEHA KERKETTA
ASST.PROFF. - RAMSAGER BHAGAT
LAB . TECH. - RASHMI GUPTA

B.SC- III YEAR

Object 1 – To Synthesize **Nickel Di-Methylglyoxime** [$\text{Ni}(\text{dmg})_2$] .

Object 2 – To Synthesize **Trans-Potassium Dioxalato Diaqua Chromate(3)ion** $\text{K}[\text{Cr}(\text{C}_2\text{O}_4)_2(\text{H}_2\text{O})]$.

Object 3 – To Synthesize **Tetra Amine Cupric Sulphate** $[\text{Cu}(\text{NH}_3)_4\text{SO}_4]\text{H}_2\text{O}$.

Object 4 – To Synthesize **Iodoform** from **Acetone** or **Ethyl Alcohol** by **Aliphatic Electrophilic Substitution**.

Object 5 – To Synthesize **2,4,6-Tribromophenol** from **Phenol** by **Aromatic Electrophilic Substitution**.

Object 6 – To Separate the Given Organic Mixture and its Identification. (**Oxalic acid** , **Benzoic acid**)

Object 7 – To Separate the Given Organic Mixture and its identification. (**Urea** , **Naphthalene**)

Object 8 – To Separate the Given Organic Mixture and its identification. (**Acetone** , **Ethyl Alcohol**)

Object 9 – To Separate the Given Organic Mixture and its identification. (**Glucose** , **Thio-urea**)

Object 10 – To Separate the Given Organic Mixture and its identification. (**Nitrobenzene** , **Benzene**)

Object 11 – To Separate the Given Organic Mixture and its identification.(**Salicylic acid, Resorcinol**)

Object 12 – To Separate the Given Organic Mixture and its identification.(**Ethyl acetate ,Aniline**)

Object 13 – To Verify **Beer's Lambert law** by Using a Spectrophotometer for colored solution of a Substance (**K₂Cr₂O₇ or kmno₄**).

Object 14 – To Determine the Strength of Given acid (approx 0.1m HCl) by Titrating it Against **NaOH Solution By Conductivity Method .**

S.No.	Requirement	Amount
1	Beaker	Nil
2	Tripod stand	Nil
3	Desecrater	Nil
4	Funnel	Nil
5	Filter paper	48.00
6	Water bath	Nil
7	Burner	Nil
8	Test- tube	Nil
9	Ignition tube	78.00
10	Red Litmus paper	Nil
11	Watch glass	Nil
12	Brush	Nil
13	Conical-Flask	Nil
14	Round bottom flask	Nil
15	China-dish	Nil
16	Blue-Litmus Paper	Nil
17	Test-Tube stand	Nil
18	Holder	Nil
19	Spatula	24.00
20	Dropper	30.00
21	Glass-Rod	35.00
22	Measuring Flask (500ml)	994.00
23	Measuring Flask (1000ml)	1455.00

S.No.	Chemical	Amount
1	Nickel sulphate	Nil

2	Dimethyl glyoxime	Nil
3	Con. Ammonia	Nil
4	Ethanol	400.00
5	Oxalic acid	427.00
6	Potassium dichromate	Nil
7	Copper sulphate	Nil
8	Con. Sulphuric acid	Nil
9	Con. Hydrochloric acid	Nil
10	Con. Nitric acid	Nil
11	Acetone	315.00
12	Iodine cristal	Nil
13	Phenol	Nil
14	Bromine water	Nil
15	Benzoic Acid	Nil
16	Urea	Nil
17	Naphthalene	Nil
18	Sodium hydroxide	Nil
19	Cerric ammonium nitrate	Nil
20	Ferric chloride	Nil
21	Alpha naphthol	Nil
22	Glucose	Nil
23	Theo-Urea	Nil
24	Nitrobenzene	Nil
25	Benzene	Nil
26	Salicylic Acid	Nil
27	Resorcinol	Nil
28	Piece of Sodium	Nil

S.No.	Instrument	Amount
1	Spectrophotometer	Nil
2	Conductometer	Nil