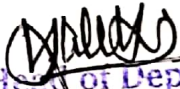


Rayat Shikshan Sanstha's
Dr. Patangrao Kadam Mahavidyalaya Ramanandnagar (Burli)
Tal-Palus Dist- Sangli
Department of Chemistry
Value Added Certificate Course on
“Analytical Methods in Chemistry”
2022-2023

Notice

Date 03/01/2023

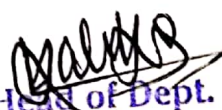
All the student are hereby informed that the “Value Added Certificate Course entitled on Analytical Methods in Chemistry” will be start from 03/01/2023. All student should remain present as per timetable.


Head of Dept.
Department of Chemistry
Dr. Patangrao Kadam Mahavidyalaya

Rayat Shikshan Sanstha's
Dr. Patangrao Kadam Mahavidyalaya, Ramanandnagar (Burli),
Tal.-Palus, Dist. - Sangli.
Department of Chemistry
Add On Course
Student List 2022-2023

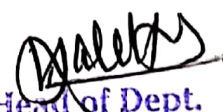
Sr.No	Roll No	Name of Students
1	1851	Aiwale Arati Satish
2	1852	Arbune Rutuja Vinayak
3	1853	Bawadekar Aniket Sanjay
4	1854	ChavanGaytriDadaso
5	1855	Dange Rohan Kisan
6	1856	Dhokale Jayesh Hanmantrao
7	1857	Gaste Vinay Shankar
8	1858	Howal Sakshi Sanajay
9	1859	Jadhav Abhishek Babaso
10	1860	Jadhav Pavan Pralhad
11	1861	Jadhav Pratiksha Chandrakant
12	1862	Jadhav Shridhar Rajendra
13	1863	Kadam Sujit Subhash
14	1864	Kate SangramJagannath
15	1865	Lad Vishwajeet Vijay
16	1866	Lokhande Tushar Nagesh
17	1867	Maske Shubham Jagannath
18	1868	Mohite Ajay Ashok
19	1869	Mohite Sakshi Mahadev

20	1870	Mulik Akash Vishwas
21	1871	Nalawade Omkar Bharat
22	1872	Nalawade Sanika Vijay
23	1873	Navadkar Snehal Sarjerao
24	1874	Nikam Tushar Rajendra
25	1875	Pathan Sana Amjad
26	1876	Patil Abhishek Anil
27	1877	Patil Pratik Dhondiram
28	1878	Patil Rutuja Ananda
29	1879	Patil Sanket Santosh
30	1880	Patil Sumit Bhalchandra
31	1881	Patil Utkarsha Uttam
32	1882	Patil Varsha Ramesh
33	1883	Pawar Ketan Sandip
34	1884	Pawar Prathmesh Sanjay
35	1885	Pawar Vaishnavi Vasant
36	1886	Suryawanshi Rohit Sanjay
37	1887	Yeware Aniket Dattatray


Head of Dept.
Department of Chemistry
Dr. Patangrao Kadam Mahavidyalaya
Ramanandnagar (Surti)

Rayat Shikshan Sanstha's
Dr. Patangrao Kadam Mahavidyalaya Ramanandnagar (Burla)
Department of Chemistry
Time Table
Value Added Course
2022-2023

Sr. No	Date	Name of the lecture	Sr. No	Date	Name of the lecture
1	03/01/2023	Mr. Y. R. Sable	13	14/02/2023	Mr. Y. R. Sable
2	07/01/2023	Mr. D. P. Gawari	14	21/02/2023	Mr. D. P. Gawari
3	10/01/2023	Mr. D. A. Sasane	15	25/02/2023	Mr. D. A. Sasane
4	14/01/2023	Mr. K. S. Kalekar	16	28/02/2023	Mr. K. S. Kalekar
5	16/01/2023	Mr. Y. R. Sable	17	04/03/2023	Mr. Y. R. Sable
6	21/01/2023	Mr. D. P. Gawari	18	11/03/2023	Mr. D. P. Gawari
7	23/01/2023	Mr. D. A. Sasane	19	14/03/2023	Mr. D. A. Sasane
8	28/01/2023	Mr. K. S. Kalekar	20	18/03/2023	Mr. K. S. Kalekar
9	31/01/2023	Mr. Y. R. Sable	21	21/03/2023	Mr. Y. R. Sable
10	04/02/2023	Mr. D. P. Gawari	22	25/03/2023	Mr. D. P. Gawari
11	07/02/2023	Mr. D. A. Sasane	23	28/03/2023	Mr. D. A. Sasane
12	11/02/2023	Mr. K. S. Kalekar	24	01/04/2023	Mr. K. S. Kalekar


Head of Dept.
Dep. Head of Department
Dr. Patangrao Kadam Mahavidhyalaya
Ramanandnagar (Burla)

Syllabus

Chromatography:

a) Separation of mixtures

i) Paper chromatographic of Co^{2+} and Ni^{2+}

ii) Separation and identification of the amino acids present in the given mixture by paper chromatography. Reporting the R_f values.

II). Solvent Extractions.

i) To separate a mixture of Ni^{2+} & Fe^{2+} by complexation with DMG and extracting the Ni^{2+} DMG complex in chloroform, and determine its concentration by spectrophotometry.

Analysis of soil:

i) Determination of pH of soil.

ii) Total soluble salt.

iii) Estimation of calcium, magnesium

iv) Qualitative detection of nitrate, phosphate

Ion exchange:

i) Determination of exchange capacity of cation exchange resins and anion exchange resins.

ii) Separation of amino acids from organic acids by ion exchange chromatography.

III Spectrophotometry

Verification of Lambert-Beer's law and determination of concentration of a coloured species (CuSO_4 , KMnO_4)

Reference Books:

1) Vogel, Arthur 1: A Text book of Qualitative Inorganic Analysis (Rev, by G.H. Jeffery and other) 5th Ed. The English language Book Society of Longman.

2) Willard, Hobart H, et al: Instrumental Methods of Analysis, 7th Ed. Wardsworth Publishing Company, Belmont, California. USA. 1988.

3) Christian, Gary D: Analytical Chemistry, 6th Ed, John Wiley & Sons, New York, 2004.

Qualitative and quantitative Aspects of analysis:

Sampling, evaluation of analytical data, errors, accuracy and precision methods of their expressing, normal law of distribution of indeterminate errors, statistical test of data: F, Q and test rejection of data, and confidence intervals.

Optical methods of analysis: (5 lectures)

Origin of spectra, interaction of radiation with matter, fundamental laws of spectroscopy and selection rules, validity of Beer-Lambert's law,

UV- visible spectrometry: Basic principle of instrumentation (choice of source, monochromator and detector) for single and double beam instrument;

Basic principle of quantitative analysis; extermination of metal ion form aqueous solution, geometrical isomers, keto-enolautomers.

Flame Atomic Absorption and Emission Spectrometry: Basic principle of instrumentation (choice of source, monochromator, detector, choice of flame and Burner desing. Techniques of atomization and sample introduction, Method of background correction. Source of chemical interferences and their method of removal. Techniques for the quantitative estimation of trace level of metal ions form water sample.

Thermal methods of analysis:

Theory of thermogravimetry (TG), basic principle of instrumentation. Techniques for quantitative estimation of Ca and Mg from their mixture.

Electroanalytical methods:

Classification of electroanalytical methods, basic principle of pH metric, potentiometric and conductometric titration. Techniques used for the determination of equivalence point. Techniques used for the, of pKa values.

Separation Techniques:

Solvent extraction: Classification, principle and efficiency of the technique. Mechanism extraction: extraction by salvation and chelation.

Techniques of extraction batch, continuous and counter current extractions.

Qualitative and quantitative aspects of solvent extraction: extraction of metal ions from aqueous solution, extraction of organic species from the aqueous media.

Chromatography: Classification principle and efficiency of the technique,
Mechanism of separation: adsorption partition & ion exchange. Development of
chromatograms: frontal, elution and displacement method.

Reference Books:

- 1) Vogel, Arthur I: A Text book of Qualitative Inorganic Analysis (Rev, by G.H. Jeffery and other) 5th Ed. The English language Book Society of Longman.
- 2) Willard, Hobart H, et al: Instrumental Methods of Analysis, 7th Ed. Wards worth Publishing Company, Belmont, California. USA. 1988.
- 3) Christian, Gary D: Analytical Chemistry, 6th Ed, John Wiley & Sons New York, 200
- 4) Harris, Daniel C: Exploring Chemical Analysis, Ed New York < W,H. Freeman, 2001.
- 5) Khopkar, S,M. Basic Concept of Analytical Chemistry New Age International Publisher, 2009 .
- 6) Skoog .D.A. Holler FJ. And Nieman, T.A. Principle of instrumental Analysis, Thoms

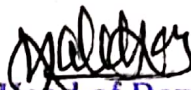
Course Duration -3 Months

After successful completion of course certificate will be issued.

Theory Periods-30

Practical Periods-30

Total number of periods -60



Head of Dept.

Department of Chemistry
Dr. Patangrao Kadam Mahavidhyalaya
Warananagar (Bund)

Rajal Shiksha Sanstha's
Dr. Patangrao Kadam mahavidyalaya Ramanandnagar (Burl)
 Department of Chemistry
 Value Added Course 2022-23
 Presenty Jan 23

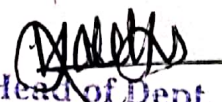
Sr.No	Roll No	Name of the Students	1/3/2023	1/7/2023	1/10/2023	1/14/2023	1/16/2023	1/21/2023	1/23/2023	1/28/2023	1/31/2023
1	1851	AiwaleAratiSatish	Aiwale	Aiwale	Aiwale	Aiwale	Aiwale	Aiwale	Aiwale	Aiwale	Aiwale
2	1852	ArbumeRutujaVinayak	Arbume	Arbume	Arbume	Arbume	Arbume	Arbume	Arbume	Arbume	Arbume
3	1853	DaswadekarAniketSanjay	ASB	ASB	ASB	ASB	ASB	ASB	ASB	ASB	ASB
4	1854	ChavanGayatriDadaso	Chavan	Chavan	Chavan	Chavan	Chavan	Chavan	Chavan	Chavan	Chavan
5	1855	DangeRohanKisan	R.Dange	R.Dange	R.Dange	R.Dange	R.Dange	R.Dange	R.Dange	R.Dange	R.Dange
6	1856	DhokaleJayeshInammantrao	DP	DP	DP	DP	DP	DP	DP	DP	DP
7	1857	GasteVinayShankar	Gaste	Gaste	Gaste	Gaste	Gaste	Gaste	Gaste	Gaste	Gaste
8	1858	HowatSakshiSanjay	Howat	Howat	Howat	Howat	Howat	Howat	Howat	Howat	Howat
9	1859	JadhavAbhishekBabaso	M. Jadhav	M. Jadhav	M. Jadhav	M. Jadhav	M. Jadhav	M. Jadhav	M. Jadhav	M. Jadhav	M. Jadhav
10	1860	JadhavPavanPralhad	Jadhav	Jadhav	Jadhav	Jadhav	Jadhav	Jadhav	Jadhav	Jadhav	Jadhav
11	1861	JadhavPratikshaChandrakant	Pratiksha	Pratiksha	Pratiksha	Pratiksha	Pratiksha	Pratiksha	Pratiksha	Pratiksha	Pratiksha
12	1862	JadhavShridharRajendra	S. Rajendra	S. Rajendra	S. Rajendra	S. Rajendra	S. Rajendra	S. Rajendra	S. Rajendra	S. Rajendra	S. Rajendra
13	1863	KadamSujitSubhash	Sujit	Sujit	Sujit	Sujit	Sujit	Sujit	Sujit	Sujit	Sujit
14	1864	KateSangramJaganmuth	Sangram	Sangram	Sangram	Sangram	Sangram	Sangram	Sangram	Sangram	Sangram
15	1865	LadVishwajeetVijay	Lad	Lad	Lad	Lad	Lad	Lad	Lad	Lad	Lad
16	1866	LokhandeTusharNagesh	LTN	LTN	LTN	LTN	LTN	LTN	LTN	LTN	LTN
17	1867	MaskarShubhamJaganmuth	Maskar	Maskar	Maskar	Maskar	Maskar	Maskar	Maskar	Maskar	Maskar
18	1868	MohiteAjayAshok	Mohite	Mohite	Mohite	Mohite	Mohite	Mohite	Mohite	Mohite	Mohite
19	1869	MohiteSakshiMahadev	Mohite	Mohite	Mohite	Mohite	Mohite	Mohite	Mohite	Mohite	Mohite
20	1870	MulikAkashVishwas	Mulik	Mulik	Mulik	Mulik	Mulik	Mulik	Mulik	Mulik	Mulik
21	1871	NalawadeOmkarBhurat	Omkar	Omkar	Omkar	Omkar	Omkar	Omkar	Omkar	Omkar	Omkar
22	1872	NalawadeSantikaVijay	SA	SA	SA	SA	SA	SA	SA	SA	SA
23	1873	NavadkarSnehalSarjerno	S.SN	S.SN	S.SN	S.SN	S.SN	S.SN	S.SN	S.SN	S.SN
24	1874	NikamTusharRajendra	Nr	Nr	Nr	Nr	Nr	Nr	Nr	Nr	Nr
25	1875	PathanSanaAmjad	Pathan	Pathan	Pathan	Pathan	Pathan	Pathan	Pathan	Pathan	Pathan
26	1876	PatilAbhishekAnil	Patil	Patil	Patil	Patil	Patil	Patil	Patil	Patil	Patil
27	1877	PatilPratikDhondiram	Patil	Patil	Patil	Patil	Patil	Patil	Patil	Patil	Patil
28	1878	PatilRutujaAnanda	Patil	Patil	Patil	Patil	Patil	Patil	Patil	Patil	Patil
29	1879	PatilSanketSantosh	Patil	Patil	Patil	Patil	Patil	Patil	Patil	Patil	Patil
30	1880	PatilSumitBhalchandra	Patil	Patil	Patil	Patil	Patil	Patil	Patil	Patil	Patil
31	1881	PatilUtkarshaUttam	Patil	Patil	Patil	Patil	Patil	Patil	Patil	Patil	Patil
32	1882	PatilVarshaRamesh	Patil	Patil	Patil	Patil	Patil	Patil	Patil	Patil	Patil
33	1883	PawarKetanSandip	Pawar	Pawar	Pawar	Pawar	Pawar	Pawar	Pawar	Pawar	Pawar
34	1884	PawarPrathmeshSanjay	Pawar	Pawar	Pawar	Pawar	Pawar	Pawar	Pawar	Pawar	Pawar
35	1885	PawarVaishnaviVasant	Pawar	Pawar	Pawar	Pawar	Pawar	Pawar	Pawar	Pawar	Pawar
36	1886	SuryawanshiRohitSanjay	SR	SR	SR	SR	SR	SR	SR	SR	SR
37	1887	YewareAniketDattatray	Yeware	Yeware	Yeware	Yeware	Yeware	Yeware	Yeware	Yeware	Yeware

Head of Dept.

Department of Chemistry
 Dr. Patangrao Kadam Mahavidhyalaya,
 Ramanandnagar (Burl)

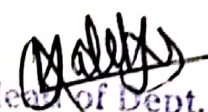
Rayat Shiksha Sanstha's
Dr. Patangrao Kadam mahavidyalaya Ramanandnagar (Burl)
Department of Chemistry
Value Added Course 2022-23
Presenty Feb 23

Sr.No	Roll No	Name of the Students	2/4/2023	2/7/2023	2/11/2023	2/14/2023	2/21/2023	2/25/2023	2/28/2023
1	1851	AiwaleAratiSatish	Aiwale	Arati	Aiwale	Aiwale	Aiwale	Aiwale	Aiwale
2	1852	ArbuncRutujaVinayak	Arbunc	Arbunc	Arbunc	Arbunc	Arbunc	Arbunc	Arbunc
3	1853	BawadekarAniket Sanjay	ASB	ASB	ASB	ASB	ASB	ASB	ASB
4	1854	ChavanGaytriDadaso	Chavan	Gaytri	Chavan	Chavan	Chavan	Chavan	Chavan
5	1855	Dange Rohan Kisan	R.Dange	R.Dange	R.Dange	R.Dange	R.Dange	R.Dange	R.Dange
6	1856	DhokaleJayeshHanmantrao	Dhokale	Jayesh	Dhokale	Dhokale	Dhokale	Dhokale	Dhokale
7	1857	GasteVinay Shankar	Gaste	Vinay	Gaste	Gaste	Gaste	Gaste	Gaste
8	1858	HowalSakshiSanajay	Howal	Sakshi	Howal	Howal	Howal	Howal	Howal
9	1859	JadhavAbhishekBabaso	Jadhav	Abhishek	Jadhav	Jadhav	Jadhav	Jadhav	Jadhav
10	1860	JadhavPavanPralhad	Jadhav	Pavan	Jadhav	Jadhav	Jadhav	Jadhav	Jadhav
11	1861	JadhavPratikshaChandrakant	Jadhav	Pratiksha	Jadhav	Jadhav	Jadhav	Jadhav	Jadhav
12	1862	JadhavShridharRajendra	Jadhav	Shridhar	Jadhav	Jadhav	Jadhav	Jadhav	Jadhav
13	1863	KadamSujitSubhash	Kadam	Sujit	Kadam	Kadam	Kadam	Kadam	Kadam
14	1864	Kate SangramJagannath	Kate	Sangram	Kate	Kate	Kate	Kate	Kate
15	1865	Lad Vishwajeet Vijay	Lad	Vishwajeet	Lad	Lad	Lad	Lad	Lad
16	1866	LokhandeTusharNagesh	Lokhande	Tushar	Lokhande	Lokhande	Lokhande	Lokhande	Lokhande
17	1867	MaskeShubhamJagannath	Maske	Shubham	Maske	Maske	Maske	Maske	Maske
18	1868	Mohite Ajay Ashok	Mohite	Ajay	Mohite	Mohite	Mohite	Mohite	Mohite
19	1869	MohiteSakshiMahadev	Mohite	Sakshi	Mohite	Mohite	Mohite	Mohite	Mohite
20	1870	MulikAkashVishwas	Mulik	Akash	Mulik	Mulik	Mulik	Mulik	Mulik
21	1871	NalawadeOmkar Bharat	Nalawade	Omkar	Nalawade	Nalawade	Nalawade	Nalawade	Nalawade
22	1872	NalawadeSanika Vijay	Nalawade	Sanika	Nalawade	Nalawade	Nalawade	Nalawade	Nalawade
23	1873	NavadkarSnehalSarjerao	Navadkar	Snehal	Navadkar	Navadkar	Navadkar	Navadkar	Navadkar
24	1874	NikamTusharRajendra	Nikam	Tushar	Nikam	Nikam	Nikam	Nikam	Nikam
25	1875	Pathan Sana Amjad	Pathan	Sana	Pathan	Pathan	Pathan	Pathan	Pathan
26	1876	Patil Abhishek Anil	Patil	Abhishek	Patil	Patil	Patil	Patil	Patil
27	1877	Patil Pratik Dhondiram	Patil	Pratik	Patil	Patil	Patil	Patil	Patil
28	1878	Patil RutujaAnanda	Patil	Rutuja	Patil	Patil	Patil	Patil	Patil
29	1879	Patil Sanket Santosh	Patil	Sanket	Patil	Patil	Patil	Patil	Patil
30	1880	Patil SumitBhalchandra	Patil	Sumit	Patil	Patil	Patil	Patil	Patil
31	1881	Patil UtkarshaUttam	Patil	Utkarsha	Patil	Patil	Patil	Patil	Patil
32	1882	Patil Varsha Ramesh	Patil	Varsha	Patil	Patil	Patil	Patil	Patil
33	1883	PawarKetanSandip	Pawar	Ketan	Pawar	Pawar	Pawar	Pawar	Pawar
34	1884	PawarPrathmesh Sanjay	Pawar	Prathmesh	Pawar	Pawar	Pawar	Pawar	Pawar
35	1885	PawarVaishnaviVasant	Pawar	Vaishnavi	Pawar	Pawar	Pawar	Pawar	Pawar
36	1886	SuryawanshiRohit Sanjay	Suryawanshi	Rohit	Suryawanshi	Suryawanshi	Suryawanshi	Suryawanshi	Suryawanshi
37	1887	YewareAniketDattatray	Yeware	Aniket	Yeware	Yeware	Yeware	Yeware	Yeware


Head of Dept.
Department of Chemistry
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Ramanandnagar (Burl)

Rayat Shiksha Sanstha's
Dr. Patangrao Kadam Mahavidyalaya Ramanandnagar (Burl)
Department of Chemistry
Value Added Course 2022-23
Presenty March 23

Sr.No	Roll No	Name of the Students	3/4/2023	3/11/2023	3/14/2023	3/18/2023	3/21/2023	3/25/2023	3/27/2023	4/11/2023
1	1851	Aiwale Anil Satish	Aiwale	Aiwale	Aiwale	Aiwale	Aiwale	Aiwale	Aiwale	Aiwale
2	1852	Achane Rutuja Vinayak	Achane	Achane	Achane	Achane	Achane	Achane	Achane	Achane
3	1853	Achane Aniket Sanjay	ASP	ASP	ASP	ASP	ASP	ASP	ASP	ASP
4	1854	Chavan Gayatri Dadas	Chavan	Chavan	Chavan	Chavan	Chavan	Chavan	Chavan	Chavan
5	1855	Dunge Rohan Kisan	R.Dunge	R.Dunge	R.Dunge	R.Dunge	R.Dunge	R.Dunge	R.Dunge	R.Dunge
6	1856	Dhokate Jayesh Laxmantrao	Dhokate	Dhokate	Dhokate	Dhokate	Dhokate	Dhokate	Dhokate	Dhokate
7	1857	Gaste Vinay Shankar	Gaste	Gaste	Gaste	Gaste	Gaste	Gaste	Gaste	Gaste
8	1858	Hawal Sakshi Sanjay	Hawal	Hawal	Hawal	Hawal	Hawal	Hawal	Hawal	Hawal
9	1859	Jadhav Abhishek Babaso	Jadhav	Jadhav	Jadhav	Jadhav	Jadhav	Jadhav	Jadhav	Jadhav
10	1860	Jadhav Pavan Talhad	Jadhav	Jadhav	Jadhav	Jadhav	Jadhav	Jadhav	Jadhav	Jadhav
11	1861	Jadhav Pratiksha Chandrakant	Jadhav	Jadhav	Jadhav	Jadhav	Jadhav	Jadhav	Jadhav	Jadhav
12	1862	Jadhav Shriharaj Rajendra	Jadhav	Jadhav	Jadhav	Jadhav	Jadhav	Jadhav	Jadhav	Jadhav
13	1863	Kadam Sujit Subhash	Kadam	Kadam	Kadam	Kadam	Kadam	Kadam	Kadam	Kadam
14	1864	Kate Sangram Jagannath	Kate	Kate	Kate	Kate	Kate	Kate	Kate	Kate
15	1865	Lad Vishwajeet Vijay	Lad	Lad	Lad	Lad	Lad	Lad	Lad	Lad
16	1866	Lokhande Tushar Nagesh	LTV	LTV	LTV	LTV	LTV	LTV	LTV	LTV
17	1867	Maske Shubham Jagannath	Maske	Maske	Maske	Maske	Maske	Maske	Maske	Maske
18	1868	Mohite Ajay Ashok	Mohite	Mohite	Mohite	Mohite	Mohite	Mohite	Mohite	Mohite
19	1869	Mohite Sakshi Mahadev	Mohite	Mohite	Mohite	Mohite	Mohite	Mohite	Mohite	Mohite
20	1870	Mulik Akash Vishwas	Mulik	Mulik	Mulik	Mulik	Mulik	Mulik	Mulik	Mulik
21	1871	Nalawade Omkar Bharat	Nalawade	Nalawade	Nalawade	Nalawade	Nalawade	Nalawade	Nalawade	Nalawade
22	1872	Nalawade Sanika Vijay	SNV	SNV	SNV	SNV	SNV	SNV	SNV	SNV
23	1873	Navalkar Sachal Sanjiv	S.S.N	S.S.N	S.S.N	S.S.N	S.S.N	S.S.N	S.S.N	S.S.N
24	1874	Nikam Tushar Rajendra	Nkr	Nkr	Nkr	Nkr	Nkr	Nkr	Nkr	Nkr
25	1875	Pathan Sana Anjad	Pathan	Pathan	Pathan	Pathan	Pathan	Pathan	Pathan	Pathan
26	1876	Patil Abhishek Anil	Patil	Patil	Patil	Patil	Patil	Patil	Patil	Patil
27	1877	Patil Pratik Dhondiram	Patil	Patil	Patil	Patil	Patil	Patil	Patil	Patil
28	1878	Patil Rutuja Ananda	Patil	Patil	Patil	Patil	Patil	Patil	Patil	Patil
29	1879	Patil Sanket Santosh	Patil	Patil	Patil	Patil	Patil	Patil	Patil	Patil
30	1880	Patil Sumit Bhalchandra	Patil	Patil	Patil	Patil	Patil	Patil	Patil	Patil
31	1881	Patil Utkarsha Uttam	UPatil	UPatil	UPatil	UPatil	UPatil	UPatil	UPatil	UPatil
32	1882	Patil Varsha Ramesh	Patil	Patil	Patil	Patil	Patil	Patil	Patil	Patil
33	1883	Pawar Ketan Sandip	Pawar	Pawar	Pawar	Pawar	Pawar	Pawar	Pawar	Pawar
34	1884	Pawar Prathmesh Sanjay	Pawar	Pawar	Pawar	Pawar	Pawar	Pawar	Pawar	Pawar
35	1885	Pawar Vaishnavi Vasant	Pawar	Pawar	Pawar	Pawar	Pawar	Pawar	Pawar	Pawar
36	1886	Suryawanshi Rohit Sanjay	SRS	SRS	SRS	SRS	SRS	SRS	SRS	SRS
37	1887	Yeware Aniket Dattatray	Yeware	Yeware	Yeware	Yeware	Yeware	Yeware	Yeware	Yeware


Head of Dept.
Department of Chemistry
Dr. Patangrao Kadam Mahavidyalaya
Ramanandnagar (Burl)

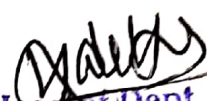
**Rayat Shikshan Sanstha's
Dr. Patangrao Kadam Mahavidyalaya, Ramanandnagar (Burli),
Tal.-Palus, Dist. - Sangli.
Department of Chemistry**

Add On Course Examination 2022-23

All the B.Sc. III Students hereby informed that the Examination for Add on Course "Analytical Methods in Chemistry" are held on 28 April 2023. At 12.00 pm to 2.00 pm



Course Incharge




Head of Dept.
Department of Chemistry
Head of Department
Dr. Patangrao Kadam Mahavidyalaya
Ramanandnagar (Burli)

Rayat Shikshan Sanstha's
Dr. Patangrao Kadam Mahavidyalaya, Ramanandnagar (Burli),
Tal.-Palus, Dist. - Sangli.
Department of Chemistry
Add On Course
Online Examination 2022-23

Time Table

Sr No.	Date	Time	Day	Subject
1	28/04/2023	12.00 pm to 2.00 pm	Friday	Analytical Methods in Chemistry


Mr. Y. R. Sable
Course Incharge


Prof. K. S. Kalekar
Head of Department
Head of Dept.
Department of Chemistry
Dr. Patangrao Kadam Mahavidhyalaya
Ramanandnagar (Burli)

Rayat Shikshan Sanstha's
Dr. Patangrao Kadam Mahavidyalaya Ramanandnagar (Burli)
Department Of Chemistry
Subject- Add On Course on Analytical Method In Chemistry
Examination 2022-2023

DATE:-28/04/2023

Time:-12.00pm to 02.00pm

Day:-Friday

Marks:-100

1) All Question are Compulsory

2) Each Question having 2 Marks

1. Solvent extraction is better if repeated extractions are done using
A Large Solvent B Small solvent
C Extra solvent D normal solvent
2. Which of the following is not a type of purposive sampling?
a) Probability sampling b) Deviant case sampling
c) Theoretical sampling d) Snowball sampling
3. The minimum sample size for qualitative interviewing is:
a) 30 b) 31
c) 60 d) It's hard to say
4. What is meant by the term 'accuracy'?
A lack of bias in the data. B The overall quality of the data.
C The level of detail at which data is stored D The extent to which a value
Approaches its true value.
5. What is meant by the term 'precision'
A The overall quality of the data.
B The extent to which a value approaches its true value.
C The lack of bias in the data.
D The level of detail at which data is stored
6. Which of the following may be caused by error in manual digitizing?
A Fuzziness. B Switch-backs.
C Overshoot and undershoot. D Wobble.
7. The intensity of an absorption band is always proportional to which of the
following factor?

- a) Atomic population
 b) Molecular population of the initial state
 c) Molecular population of the final state
 d) Temperature
8. On which factors the vibrational stretching frequency of diatomic molecule depend?
- a) Force constant b) Atomic population
 c) Temperature d) Magnetic field
9. The vibrations, without a center of symmetry are active in which of the following region?
- a) Infrared but inactive in Raman b) Raman but inactive in IR
 c) Raman and IR d) Inactive in both Raman and IR
10. The frequency of vibration of a bond is a function of which factor?
- a) Force constant of the bond
 b) Masses of the atoms involved in bonding
 c) Force constant of the bond and Masses of the atoms
 d) Bond order
11. Lambert's law states that the intensity of light decreases with respect to
- a) Concentration b) Distance
 c) Composition d) Volume
12. Beer's law states that the intensity of light decreases with respect to
- a) Concentration b) Distance
 c) Composition d) Volume
13. Beer Lambert's law gives the relation between which of the following?
- a) Reflected radiation and concentration
 b) Scattered radiation and concentration
 c) Energy absorption and concentration
 d) Energy absorption and reflected radiation
14. In atomic absorption spectroscopy the most strongly absorbed light is called as
- A) Resonance line B) Base line
 C) Stokes line D) anti stokes line
15. in atomic emission spectroscopy the emission due to the electronic transition of
- A) State to singlet ground state.
 C) Singlet ground state to triplet excited state

- D) Triplet excited state to singlet ground state.
 B) Singlet excited Singlet ground state to singlet excited state
16. In atomic emission spectroscopy the graph drawn between
 A) Emission vs. Concentration B) Absorbance Vs Concentration
 C) Absorbance Vs wave length D) Emission Vs wave length
17. Which one of the following indicators would be most suitable for this titration?
 A any acid/base indicator is suitable B phenolphthalein ($pK_a = 9.6$)
 C cresol red ($pK_a = 8.3$) D methyl red ($pK_a = 5.1$) E methyl yellow
 ($pK_a = 3.1$)
18. In which of the following acid / base titrations, can we NOT determine the equivalence point in an accurate manner?
 A strong acid / strong base B strong acid / weak base
 C weak acid / strong base D weak acid / weak base
19. Which of the following statements regarding the solubility of $Mg(OH)_2$ is correct?
 A pH has no effect on the solubility of $Mg(OH)_2$.
 B $Mg(OH)_2$ is less soluble at pH 4 than pH 7.
 C $Mg(OH)_2$ is less soluble in 0.1 M $MgCl_2$ solution than in water
 D all of the above
20. How many stereoisomers are possible for the complex $[Ni(en)_3]^{2+}$? $en =$
 ethylenediamine = $NH_2CH_2CH_2NH_2$
 A 1 B 2
 C 3 D 4
- 21) A most common example of extraction is with help of
 A Ether B alcohol
 C benzene D chloroform
22. The ether layer is used to separate
 A Fiber B inorganic impurities
 C organic impurities D gases
23. When the component has a small value of K , it is supposed to have an affinity
 for:
 a) Mobile phase b) No phase
 c) Stationary phase d) Whole solution

24. Solvent extraction is more effective when the extraction is repeated with:
a) Extra solvent b) Large solvent
c) Small solvent d) No solvent
25. A mobile phase cannot be a :
a) Gas b) Solid
c) Liquid d) Solid or gas
- 26) The travelling distance of mobile phase in TLC is
A) 2 cm B) 1 cm
C) 2.5 cm D) 10 cm
- 27) In TLC, initially the sample is
A) In contact with mobile phase B) Not in contact with mobile phase
C) Coated at the level of mobile phase D) Coated below the level of mobile phase
- 28) The sample introduction in HPTLC is carried by
A) Goniometry B) platinum-iridium capillary
C) Densitometry d) Micropipette
- 29) Identification of spots on the tlc plate is done by all of the following except
A) Spraying with reagents B) Under microscope
C) Fluorescence D) Fluorescent adsorbent
- 30) The binder used in the preparation of TLC plates is
A) Monnitol B) Calcium
C) Dextrose D) PVP
31. What is the reason for the red colour of the red soil?
A. Phosphoric Acid B. Humus
C. Nitrogen D. Iron
32. Which of the following soil has air space and loosely packed?
A. Sandy Soil B. Clayey Soil
C. Loamy Soil D. All of these

- 33). Water holding capacity is low?
- Clay soil.
 - Loam soil.
 - Gravel.
 - Sandy soil.
- 34). First manufactured fertilizer in India is..?
- SSP.
 - DSP.
 - Urea.
 - Phosphate.
- 35). Recently formed soil order is..?
- Histosol.
 - Entisol.
 - Alfisol.
 - Ultisols.
- 36) Clay soil should have..?
- 40% clay.
 - 20% clay.
 - 35% clay.
 - 30 % clay.
36. Which sentence is true about batch method ?
- It is multiple step process.
 - It is not used for preparation of the demineralized water.
 - In this process more than two containers.
 - This is single step process
38. Which method are used for preparing of demineralized water?
- Gas Chromatography
 - Batch method (ion exchange)
 - Mass spectroscopy
 - Complexometric Titration
- 39). Which is not application of ion Exchange ?
- It is used for softening of water.
 - It is used for demineralization of water.
 - It is used for separation of similar ion in one sample.
 - It is used in preformulation.
- 40). Which is application of demineralized water ?
- Biological studies
 - conductance experiment
 - A and B
 - None of the above
- 41). Which is not ion exchange technique ?
- Batch method
 - Column method
 - Paper Chromatography
 - A and B
- 42). Tungsten lamp filament has required how much temperature ?
- 2000k
 - 3000k
 - 4000k
 - 5000k

- 43). How much range wavelength is transmit by silicate glass ?
A. 100 nm to 200 nm B. 200nm to 300 nm
C. 300 nm to 350 nm D. 10nm to 40 nm
- 44). what is role of slit in uv-visible spectroscopy ?
A. Monochromatic radiation to polychromatic radiation.
B. Polychromatic radiation to monochromatic radiation.
C. A and B D. None of this
- 45). Which radiation source has electrode in its construction ?
A. Tungsten lamp B. Hydrogen discharge lamp
C. Xenon Discharge Lamp D. Mercury lamp
- 46). Which device is used to isolate the radiation of the desired wavelength from wavelength of the continuous spectra ?
A. Monochromator B. Radiation source
C. Recorder D. None of this
47. In mass spectrometry, fragmentation of ions is achieved through?
A. Ionization B. Splitting
C. Solubilization D. Coupling
- 48). which force is involved in the Chromatography?
A. Hydrogen bonding B. London force
C. Electric static force D. All of the above
- 49). which technique is also known as colourwriting?
A. NMR B. Mass spectroscopy
C. Chromatography D. All of the above
- 50). Non Hazardous substitution for RIA is
A. UV B. HPLC
C. NMR D. None of the above


Head of Dept.

Department of Chemistry
Dr. Patangrao Kadam Mahavidhyalaya
Ramanandnagar (Burdli)

Rayat Shikshan Sanstha's
Dr.Patangrao Kadam Mahavidyalaya Ramanandnagar (Burl)
Tal-Palus Dist - Sangli
Department of Chemistry
Add On Course
Exam Presenty Report **Date 28/04/2023**
2022-2023

Sr. No	Roll No	Name of the Student	Sign
1	1851	Aiwale Arati Satish	Aiwale
2	1852	Arbune Rutuja Vinayak	Arbune
3	1853	Bawadekar Aniket Sanjay (Manisha)	Bawadekar
4	1854	Chavan Gaytri Dadaso	Chavan
5	1855	Dange Rohan Kisan (Sandhyarani)	Dange
6	1856	Dhokale Jayesh Hanmantrao	Dhokale
7	1857	Gaste Vinay Shankar	Shankar
8	1858	Howal Sakshi Sanajay	Howal
9	1859	Jadhav Abhishek Babaso	Jadhav
10	1860	Jadhav Pavan Pralhad	Jadhav
11	1861	Jadhav Pratiksha Chandrakant	Jadhav
12	1862	Jadhav Shridhar Rajendra	Jadhav
13	1863	Kadam Sujit Subhash (Vaishali)	Kadam
14	1864	Kate Sangram Jagannath	Kate
15	1865	Lad Vishwajeet Vijay	Lad
16	1866	Lokhande Tushar Nagesh	Lokhande
17	1867	Maske Shubham Jagannath	Maske
18	1868	Mohite Ajay Ashok	Mohite
19	1869	Mohite Sakshi Mahadev	Mohite
20	1870	Mulik Akash Vishwas	Mulik
21	1871	Nalawade Omkar Bharat	Nalawade
22	1872	Nalawade Sanika Vijay	Nalawade
23	1873	Navadkar Snehal Sarjerao	Navadkar
24	1874	Nikam Tushar Rajendra	Nikam
25	1875	Pathan Sana Amjad	Pathan
26	1876	Patil Abhishek Anil	Patil
27	1877	Patil Pratik Dhondiram	Patil
28	1878	Patil Rutuja Ananda	Patil
29	1879	Patil Sanket Santosh (Surekha)	Patil
30	1880	Patil Sumit Bhalchandra	Patil
31	1881	Patil Utkarsha Uttam	Patil
32	1882	Patil Varsha Ramesh	Patil


33	1883	Pawar Ketan Sandip	Handwritten signature
34	1884	Pawar Prathmesh Sanjay	P.S. PAWAR
35	1885	Pawar Vaishnavi Vasant	Handwritten signature
36	1886	Suryawanshi Rohit Sanjay	Handwritten signature
37	1887	Yeware Aniket Dattatray	A. Yeware

~~Handwritten signature~~
Head of Dept
Department of Chemistry
Dr. Patangrao Kadam Mahavidhyalaya
Ramanandnagar (Burla)

Rayat Shikshan Sanstha's
Dr. Patangrao Kadam Mahavidyalaya, Ramanandnagar (Burl),
Tal.-Palus, Dist. - Sangli.
Department of Chemistry
Add On Course
2022-2023
Exam Result

Sr. No	Roll No	Name of the Student	Obtained Marks
1	1851	Aiwale Arati Satish	70
2	1852	Arbune Rutuja Vinayak	50
3	1853	Bawadekar Aniket Sanjay (Manisha)	58
4	1854	Chavan Gaytri Dadaso	66
5	1855	Dange Rohan Kisan (Sandhyarani)	68
6	1856	Dhokale Jayesh Hanmantrao	70
7	1857	Gaste Vinay Shankar	74
8	1858	Howal Sakshi Sanajay	74
9	1859	Jadhav Abhishek Babaso	76
10	1860	Jadhav Pavan Pralhad	74
11	1861	Jadhav Pratiksha Chandrakant	78
12	1862	Jadhav Shridhar Rajendra	70
13	1863	Kadam Sujit Subhash (Vaishali)	80
14	1864	Kate Sangram Jagannath	56
15	1865	Lad Vishwajeet Vijay	54
16	1866	Lokhande Tushar Nagesh	56
17	1867	Maske Shubham Jagannath	52
18	1868	Mohite Ajay Ashok	68
19	1869	Mohite Sakshi Mahadev	70
20	1870	Mulik Akash Vishwas	74
21	1871	Nalawade Omkar Bharat	74
22	1872	Nalawade Sanika Vijay	76
23	1873	Navadkar Snehal Sarjerao	74
24	1874	Nikam Tushar Rajendra	78
25	1875	Pathan Sana Amjad	70
26	1876	Patil Abhishek Anil	80
27	1877	Patil Pratik Dhondiram	56
28	1878	Patil Rutuja Ananda	54
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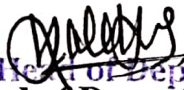

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Head of Department
Department of ...
Dr. Palangrao Kadam Mahavidhyalaya
Ramanandnagar (Burla)

Rayat Shikshan Sanstha's
Dr. Patangrao Kadam Mahavidyalaya Ramanandnagar (Burli)
Department Of Chemistry
Add On Course "Analytical Methods in Chemistry"
2022-2023

Programme Outcome

To develop an understanding of the range and uses of analytical methods in Chemistry.

- To acquire basic concepts, principles and techniques of modern analytical Chemistry.
- To establish and appreciation of the role of Chemistry in quantitative analysis.
- To provide experience in some scientific methods employed in analytical Chemistry.
- Students are introduced to the fundamental instrumental methods of chemical analysis commonly use in pharmaceutical laboratories.
- Students are introduced to the fundamental analytical technique that are useful for the purification and characterisation of advanced material


Head of Dept.
Head of Department,
Dr. Patangrao Kadam Mahavidhyalaya,
Ramanandnagar (Burli)



Rayat Shikshan Sanstha's

Dr. PATANGRAO KADAM MAHAVIDYALAYA RAMANANDNAGAR (BURLI),

TAL: PALUS, DIST: SANGLI - 416 308

Reaccredited with 'A' Grade by NAAC (CGPA-3.02)


Department of Chemistry

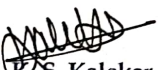
"Add On Certificate Course"


2022-2023

CERTIFICATE

This is to certify that Mr. /Mrs. /Miss. Maske Shubham Jagannath has actively participated in Add On certificate Course, "**Analytical Methods in Chemistry**" for B.Sc. Part III students conducted by Department of Chemistry, Dr. Pantangrao Kadam Mahavidyalaya, Ramanandnagar (BurlI) in the year 2022-2023.


Mr. Y. R. Sable
Course Incharge


Prof. R. S. Kalekar
Head of Department


Dr. T. S. Bhosale
Principal



Rayat Shikshan Sanstha's

**Dr. Patangrao Kadam Mahavidyalaya Ramanandnagar (Burli),
Tal.- Palus, Dist. - Sangli.**

Reaccredited with 'A' Grade by NAAC (CGPA-3.02)
Department of Chemistry

Year: 2022-2023

Date 04/05/2023

Add On Course on Analytical Methods in Chemistry

The Department of Chemistry conduct the Add On Course (self-finance course) "Analytical Methods in Chemistry". The duration of this course is three months. In this year 37 students admitted for this course. The course is for the 100 marks. This course Includes three paper based on analytical techniques.

1. Chromatography.
2. Spectrophotometry.
3. Qualitative and quantitative Aspects of analysis.

This course is successfully completed by the B.Sc. Part III students in the academic year 2022-2023.

Outcomes:

- ✚ To acquire basic concepts, principles and techniques of modern analytical Chemistry.
- ✚ To develop an understanding of the range and uses of analytical methods in Chemistry.
- ✚ To establish and appreciation of the role of Chemistry in quantitative analysis.
- ✚ To provide experience in some scientific methods employed in analytical Chemistry.

**The Total no of
beneficiaries are 37**

Photo Gallery




Student doing analysis of the some Chemical Samples by Spectrophotometer



Demonstration of Spectrophotometer to students by Mr. Y. R. Sable, Miss P.R. Ghodake and Miss V. V. Nalawade .


Head of Department


Principal
Dr. Patangrao Kadam Mahavidyalaya
Ramanandnagar (Burli)