Rayat Shikshan sanstha's

Dr. Patangrao Kadam Mahavidyalaya Ramanandnagar (Burli)
Tal- Palus Dist-Sangli
Department of Chemistry

Add On Course "Analytical Methods In Chemistry"
2020-2021
Notice

All the student are hereby informed that the short Add On Course "Analytical methods in Chemistry" Will be started from 04 January 2021 as per your timetable.

Course Incharge

Head of Department

Received
16-07-2021

Rayat Shikshan Sanstha's

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

Department of Chemistry

Year: 2020-2021

Value Added Course on

Analytical Methods in Chemistry

STRUCTURE OF COURSE

No. of students allotted for the Course:

Duration of course : 03 Months

Working Day : 90 Days

Time of the Course : 2.00 to 5.00 pm (Practical)
10.00 to11:00 pm (Theory)

Class of the Students : B.Sc. III

Outline of the course Per Week: 3 Lecture and 1 practical per week and one visit per month

Total Lecture : 30

Total Practical Period : 30

Total No. of Periods of Course : 60 periods

Fee for Cours : Free

Total Budget: -

Faculty : 1. Dr. V. B. Patil

: 2 Mr. U. S. Shelke

: 3. Mr.Y. R.Sable

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 low 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 bream instrument;

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

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 condactometric 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 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. 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: Esploring 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

Incharge
Certificate Course
Department of Chemistry

Head
Department of Chemistry

Rayat Shikshan Sanstha's

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

Department of Chemistry

Year: 2020-2021

Add On Course on
Analytical Methods in Chemistry

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.
- To provide an understanding of chemical methods employed for elemental and compound analysis.
- To develop understanding of the professional and safety responsibilities, residing in working on chemicals

Rayat Shikshan Sanstha's
Dr.Patangrao KadamMahavidyalaya , Ramanandnagar (Burli),
Tal.-Palus, Dist. - Sangli.
Department of Chemistry
Add On Course
Student List 2020-2021

Sr.No	Roll No	Name of Students
1	1851	BABAR AMRUTA ANKUSH
2	1852	CHAVAN ANIKET ANIL
3	1853	CHAVAN PRAJAKTA VITTHAL
4	1854	CHOUGULE SANKET ASHOK
5	1855	HOWAL OMKAR VIKAS
6	1856	JADHAV ABHISHEK ARUN
7	1857	JADHAV MONIKA ASHOK
8	1858	JADHAV POOJA ANANDA
9	1859	JADHAV PRIYANKA POPAT
10	1860	JADHAV SALONI BAJARANG
11	1861	JADHAV YOGITA SUBHASH
12	1862	KAMBLE HARSHADA VISHWANATH
13	1863	KAMBLE PADMAJA CHANDRAKANT
14	1864	KOLI OMKAR SADASHIV
15	1865	KUMBHAR GANESH DHANAJI
16	1866	KUMBHAR PRATIKSHA LAXMAN
17	1867	MANE AMIT SUBHASH
18	1868	MOHITE SHWETA DILIP
19	1869	MUJAWAR PARVEJ HARUN
20	1870	MULANI SABIR ZAKIR
21	1871	MULANI SUJAN ZAKIR
22	1872	MULIK TEJASWINI PRAKASH
23	1873	PATIL KOMAL SUDHIR
24	1874	PATIL PRAJAKTA ANANDRAO
25	1875	PATIL RITESH RAJENDRA
26	1876	PATIL RUTUJA DAGADU

27	1877	PATIL VIBHUTI VISHWASRAO
28	1878	RADE MEGHA ASHOK
29	1879	SAWANT PIYUSHA SHANTANU
30	1880	SAWANT SHUBHAM BHARAT
31	1881	SAWAT ANIKET HANMANT
32	1882	YAMGAR MAYURI ANIL
33	1883	AUTE MAHESH GANPATRAO
34	1884	BABAR ANIKET ANKUSH
35	1885	JADHAV RUSHIKESH DILIP
36	1886	KADAM SATYAJEET KUMAR
37	1887	KATE VIKRAM JAGNNATH
38	1888	KAULE ANIKET VASANT
39	1889	KUMBHAR SHIVRAJ VILAS
40	1890	LAD YOGESHWAR ASHOK
41	1891	MOHITE AJAY RAGHUNATH
42	1892	MORE PAWAN SURESH
43	1893	MULLA AKRAM SHAMSHUDDIN
44	1894	PATHAN SOHEL AKIL
45	1895	PATIL AISHWARYA SATISH
46	1896	PATIL ANIKET RAJENDRA
47	1897	PATIL PRATAP BALASO
48	1898	PATIL SUMIT ISHWAR
49	1899	SAWANT SHUBHAM SANJAY
50	1900	SHINDE SAGAR SHANKAR

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

Rayat Shikshan Sanstha's
A. S. C. College, Ramanandnagar (Burli)

ANALYTICAL METHODS IN CHEMISTRY
VALUE ADDED COURSE
Time Table (2020-21)

Theory **B.Sc. III** **Time- 10:00 to 11:00 am**

Sr. No.	Date	Name of the Lecturer	Sr. No.	Date	Name of the Lecturer
1	05.01.2020	Mr. Y. R. Sable	13	02.02.2020	Mr. Y. R. Sable
2	07.01.2020	Mr. V. R. Bhosale	14	04.02.2021	Prof. Dr. P. B. Piste
3	09.01.2020	Mr. U. S. Shelke	15	06.02.2021	Mr. D. A. Sasane
4	12.01.2020	Dr .V. B. Patil	16	09.02.2021	Mr. V. R. Bhosale
5	14.01.2020	Mr. D. P. Gawari	17	11.02.2021	Mr. U. S. Shelke
6	16.01.2020	Mr. D.A. Sasane	18	13.02.2021	Dr .V. B. Patil
7	19.01.2020	Prof. Dr. P. B. Piste	19	16.02.2021	Mr. D. P. Gawari
8	21.01.2020	Dr. V. B. Patil	20	18.02.2021	Mr. Y. R. Sable
9	23.01.2020	Mr. Y. R. Sable	21	20.02.2021	Mr. Y. R. Bhosale
10	26.01.2020	Mr. U. S. Shelke	22	23.02.2021	Mr. D. P. Gawari
11	28.01.2020	Mr. D. A. Sasane	23	25.02.2021	Mr. U. S. Shelke
12	30.01.2020	Mr. V. R. Bhosale	24	27.02.2021	Mr. D. A. Sasane

Practical **Time: - 2.00 to 5.00 pm**

Sr.No.	Date	Name of the Lecturer	Sr.No.	Date	Name of the Lecturer
1	09.01.2021	Mr. D. P. Gawari	5	06.03.2021	Dr. V. B. Patil
2	23.01.2021	Mr. U. S. Shelke	6	20.03.2021	Mr. Y. R. Sable
3	06.02.2021	Mr. D. A. Sasane	7	03.04.2021	Prof. Dr. P. B. Piste
4	20.02.2021	Mr. V. R. Bhosale	8	17.04.2021	Mr. Y. R. Sable

Head
Dept. of Chemistry
A. S. C. College
Ramanandnagar (Burli)

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

Value Added Course Examination 2020-21

All The B.Sc III Students hereby informed that the Examination for Value Added Course " Analytical Method in Chemistry" are held on 27 Feb 2021. At 12.00 pm to 2.00 pm

Course Incharge

Head of Department

Rayat Shikshan Sanstha's
Dr.Patangrao KadamMahavidyalaya , Ramanandnagar (Burli),
Tal.-Palus, Dist. - Sangli.
Department of Chemistry
Value Added Course
Online Examination 2020-21

Time Table

Sr No.	Date	Time	Day	Subject
1	27/02/2021	12.00 pm to 2.00 pm	Saturday	Section (I) Theory Section (II) Practical's

Mr. Y. R. Sable
Course incharge

Dr. V. B. Patil
Head of Department

Rayat Shikshan Sanstha's Dr. Patangrao Kadam Mahavidyalaya Ramanandnagar (Burli), Online Exam On Add On Course On Analytical Method In Chemistry B.Sc-III

Examination 2020-21
Section (I) 50 Marks
Section (II) 50 Marks
1) All Question are Compulsory
2) Each Question having 2 Marks
Time: 12.00 to .2.00pm
Date 27/02/2021

Day: saturday
Total Marks: 100

*Required

1. Email address *

_____

2. Email *

_____

3. Name of the Student *

_____

4. Roll Number *

_____

5. Class *

_____

6. Mobile Number *

_____

7. Section [I] 50 Marks Theory

_____

8. 1. Solvent extraction is better if repeated extractions are done using * 2 points

Mark only one oval.

- A) Large Solvent
- B) Small solvent
- c) Extra solvent
- D) Normal solvent

9. 2 Which of the following is not a type of purposive sampling? * 2 points

Mark only one oval.

- a) Probability sampling
- b) Deviant case sampling
- c) Theoretical sampling
- d) Snowball sampling

10. 3. The minimum sample size for qualitative interviewing is: * 2 points

Mark only one oval.

- a) 30
- b) 31
- c) 60
- d) It's hard to say

11. 4.What is mean by the term 'accuracy' * 2 points

Mark only one oval.

- a)The 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

12. 5. What is meant by the term 'precision'? * 2 points

Mark only one oval.

- 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.

13. 6. Which of the following may be caused by error in manual digitizing? * 2 points

Mark only one oval.

- a) Fuzzyness.
- B) Switch-backs.
- c) Overshoot and undershoot.
- D) Wobble.

14. 7. The intensity of an absorption band is always proportional to which of the following factor? * 2 points

Mark only one oval.

- a) Atomic population
- B) Molecular population of the initial state
- C) Molecular population of the final state
- D) Temperature

15. 8. On which factors the vibrational stretching frequency of diatomic molecule depend? * 2 points

Mark only one oval.

- a) Force constant
- b) Atomic population
- c) Temperature
- d) Magnetic field

16. 9.The vibrations, without a center of symmetry are active in which of the following region? * 2 points

Mark only one oval.

- a) Infrared but inactive in Raman
- b) Raman but inactive in IR
- c) Raman and IR
- d) Inactive in both Raman and IR

17. 10.The frequency of vibration of a bond is a function of which factor? * 2 points

Mark only one oval.

- 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

18. 11.Lambert's law states that the intensity of light decreases with respect to * 2 points

Mark only one oval.

- a) Concentration
- b) Distance
- c) Composition
- d) Volume

19. 12. Beer's law states that the intensity of light decreases with respect to * 2 points

Mark only one oval.

- a) Concentration
- b) Distance
- c) Composition
- d) Volume

20. 13.Beer Lambert's law gives the relation between which of the following? * 2 points

Mark only one oval.

- a) Reflected radiation and concentration
- b) Scattered radiation and concentration
- c) Energy absorption and concentration
- d) Energy absorption and reflected radiation

21. 14. In atomic absorption spectroscopy the most strongly absorbed light is called as line * 2 points

Mark only one oval.

- A) Resonance
- B) Base line
- C) stokes
- D) anti stokes line

22. 15.In atomic emission spectroscopy the emission due to the electronic transition of. * 2 points

Mark only one oval.

- A) state to singlet ground state
- B) singlet exited
- C) Singlet ground state to triplet exited state
- D) Triplet exited state to singlet ground state.

23. 16. In atomic emission spectroscopy the graph drawn between * 2 points

Mark only one oval.

- (A) Emission vs. Concentration
- (B) Absorbance Vs Concentration
- (C) Absorbance Vs wave length
- (D) Emission Vs wave length

24. 17. Which one of the following indicators would be most suitable for this titration? * 2 points

Mark only one oval.

- A) any acid/base indicator is suitable
- B) phenolphthalein (pKa = 9.6)
- C) cresol red (pKa = 8.3)
- D) methyl red (pKa = 5.1)

25. 18. In which of the following acid / base titrations, can we NOT determine the equivalence point in an accurate manner? * 2 points

Mark only one oval.

- A) strong acid / strong base
- B) strong acid / weak base
- C) weak acid / strong base
- D) weak acid / weak base

26. 19. Which of the following statements regarding the solubility of Mg(OH)2 is correct? * 2 points

Mark only one oval.

- 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 MgCl2 solution than in water.
- D) all of the above

27. 20. How many stereoisomers are possible for the complex [Ni(en)3] 2+? en = ethylenediamine = NH2CH2CH2NH2 * 2 points

Mark only one oval.

- A) 1
- B) 2
- C) 3
- D) 4

28. 21. A most common example of extraction is with help of 2 points

Mark only one oval.

- A) Ether
- B) alcohol
- C) benzene
- D) chloroform

29. 22. The ether layer is used to separate * 2 points

Mark only one oval.

- A Fiber
- B inorganic impurities
- C organic impurities
- D gases

30. 23. When the component has a small value of K, it is supposed to have an affinity for * 2 points

Mark only one oval.

- a) Mobile phase
- b) No phase
- c) Stationary phase
- d) Whole solution

31. 24. Solvent extraction is more effective when the extraction is repeated with: * 2 points

Mark only one oval.

- a) Extra solvent
- b) Large solvent
- c) Small solvent
- d) No solvent

32. 25. A mobile phase cannot be a : * 2 points

Mark only one oval.

- a) Gas
- b) Solid
- c) Liquid
- d) Solid or gas

33. Section [I I] Practical 50 Marks

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34. 26. The travelling distance of mobile phase in TLC is * 2 points

Mark only one oval.

- (A) 2 cm
- (B) 1 cm
- (C) 2.5 cm
- (D) 10 cm

35. 27. In TLC, initially the sample is * 2 points

Mark only one oval.

- 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

36. 28.) The sample introduction in HPTLC is carried bye * 2 points

Mark only one oval.

- A) Goniometry
- B) platinum-iridium capillary
- C) Densitometry
- D) Micropipette

37. 29. Identification of spots on the TLC plate is done by all of the following EXCEPT * 2 points

Mark only one oval.

- A) Spraying with reagents
- B) Under microscope
- C) Fluorescence
- D) Fluorescent adsorbent

38. 30.The binder used in the preparation of TLC plates is * 2 points

Mark only one oval.

- A) Monnitol
- B) Calcium
- C) Dextrose
- D) PVP

39. 31.What is the reason for the red colour of the red soil? * 2 points

Mark only one oval.

- A) Phosphoric Acid
- B) Humus
- C) Nitrogen
- D) Iron

40. 32.Which of the following soil has air space and loosely packed? * 2 points

Mark only one oval.

- A) Sandy Soil
- B) Clayey Soil
- C) Loamy Soil
- D) All of these

41. 33. Water holding capacity is low? * 2 points

Mark only one oval.

- (a) Clay soil
- (b) Loam soil
- (c) Gravel
- (d) Sandy soil

42. 34. First manufactured fertilizer in India is? * 2 points

Mark only one oval.

- a) SSP
- b) DSP
- c) Urea
- d) Phosphate

43. 35. Recently formed soil order is? * 2 points

Mark only one oval.

- a) Histosol
- b) Entisol.
- c) Alfisol
- d) Ultisols

44. 36.Clay soil should have? * 2 points

Mark only one oval.

- a) 40% clay
- b) 20% clay
- c) 35% clay
- d) 30 % clay

45. 37. Which sentence is true about batch method ? * 2 points

Mark only one oval.

- A) It is multiple step process
- B) It is not used for preparation of the demineralized water
- C) In this process more than two containers
- D) This is single step process

46. 38. Which method are used for preparing of demineralized water? * 2 points

Mark only one oval.

- A) Gas Chromatography
- B) Batch method (Ion exchange)
- C) Mass sepctroscopy
- D) Complexometric Titration

47. 39.Which is not application of Ion Exchange ?.. * 2 points

Mark only one oval.

- A) It is used for softening of water
- B) It is used for demineralization of water.
- C) It is used for separation of similar ion in one sample
- D) It is used in preformulation.

48. 40.Which is not ion exchange technique ? * 2 points

Mark only one oval.

- A) Batch method
- B) Column method
- C) Paper Chromatography
- D) A and B

49. 41.Which is application of demineralized water ? * 2 points

Mark only one oval.

- A) Biological studies
- B) conductance experiment
- C) A and B
- D) None of the above

50. 42. Tungsten lamp filament has required how much temperature ? 2 points

Mark only one oval.

- A) 2000k
- B) 3000k
- C) 4000k
- D) 5000k

51. 43. How much range wavelength is transmit by silicate glass ? * 2 points

Mark only one oval.

- A) 100 nm to 200 nm
- B) 200nm to 300 nm
- C) 300 nm to 350 nm
- D) 10nm to 40 nm

52. 44. what is role of slit in uv-visible spectroscopy ?... * 2 points

Mark only one oval.

- A) Monochromatic radiation to polychromatic radiation
- B) Polychromatic radiation to monochromatic radiation
- C) A and B
- D) None of this

53. 45. Which radiation source has electrode in its construction ?. * 2 points

Mark only one oval.

- A) Tungsten lamp
- B) Hydrogen discharge lamp
- C) Xenon Discharge Lamp
- D) Mercury lamp

54. 46. Which device is used to isolate the radiation of the desired wavelength from wavelength of the continuous spectra ? * 2 points

Mark only one oval.

- A) Monochromator
- B) Radiation source
- C) Recorder
- D) None of this

55. 47. In mass spectrometry, fragmentation of ions is achieved through? * 2 points

Mark only one oval.

- A. Ionization
- B. Splitting
- C. Solubilization
- D. Coupling

56. 48.Which force is involved in the Chromatography ? . All of the above * 2 points

Mark only one oval.

- A. Hydrogen bonding
- B. London force
- C. Electric static force
- D. All of the above

57. 49. Which technique is also known as colourwriting ? * 2 points

Mark only one oval.

- A. NMR
- B. Mass spectroscopy
- C. Chromatography
- D. All of the above

58. 50.Non Hazardous substitution for RIA is. * 2 points

Mark only one oval.

- A. Uv
- B. HPLC
- C. NMR
- D. None of the above

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

Year: 2020-2021

Value Added Course on

Analytical Methods in Chemistry

Jan 2021 Attendance Theory Time 10 am to 11 am

Roll No	Name of Students	5	7	9	12	14	16	19	21	23	26	28	30
1851	BABAR AMRUTA ANKUSH	P	P	P	P	P	P	P	P	P	P	P	P
1852	CHAVAN ANIKET ANIL	P	P	P	P	P	P	P	P	P	P	P	P
1853	CHAVAN PRAJAKTA VITTHAL	P	P	P	P	P	P	P	P	P	P	P	P
1854	CHOUGULE SANKET ASHOK	P	P	P	P	P	P	P	P	P	P	P	P
1855	HOWAL OMKAR VIKAS	P	P	P	P	P	P	P	P	P	P	P	P
1856	JADHAV ABHISHEK ARUN	P	P	P	P	P	P	P	P	P	P	P	P
1857	JADHAV MONIKA ASHOK	P	P	P	P	P	P	P	P	P	P	P	P
1858	JADHAV POOJA ANANDA	P	P	P	P	P	P	P	P	P	P	P	P
1859	JADHAV PRIYANKA POPAT	P	P	P	P	P	P	P	P	P	P	P	P
1860	JADHAV SALONI BAJARANG	P	P	P	P	P	P	P	P	P	P	P	P
1861	JADHAV YOGITA SUBHASH	P	P	P	P	P	P	P	P	P	P	P	P
1862	KAMBLE HARSHADA VISHWANATH	P	P	P	P	P	P	P	P	P	P	P	P
1863	KAMBLE PADMAJA CHANDRAKANT	P	P	P	P	P	P	P	P	P	P	P	P
1864	KOLI OMKAR SADASHIV	P	P	P	P	P	P	P	P	P	P	P	P
1865	KUMBHAR GANESH DHANAJI	P	P	P	P	P	P	P	P	P	P	P	P
1866	KUMBHAR PRATIKSHA LAXMAN	P	P	P	P	P	P	P	P	P	P	P	P
1867	MANE AMIT SUBHASH	P	P	P	P	P	P	P	P	P	P	P	P
1868	MOHITE SHWETA DILIP	P	P	P	P	P	P	P	P	P	P	P	P
1869	MUJAWAR PARVEJ HARUN	P	P	P	P	P	P	P	P	P	P	P	P
1870	MULANI SABIR ZAKIR	P	P	P	P	P	P	P	P	P	P	P	P

1871	MULANI SUJAN ZAKIR												
1872	MULIK TEJASWINI PRAKASH												
1873	PATIL KOMAL SUDHIR												
1874	PATIL PRAJAKTA ANANDRAO												
1875	PATIL RITESH RAJENDRA												
1876	PATIL RUTUJA DAGADU												
1877	PATIL VIBHUTI VISHWASRAO												
1878	RADE MEGHA ASHOK												
1879	SAWANT PIYUSHA SHANTANU												
1880	SAWANT SHUBHAM BHARAT												
1881	SAWAT ANIKET HANMANT												
1882	YAMGAR MAYURI ANIL												
1883	AUTE MAHESH GANPATRAO												
1884	BABAR ANIKET ANKUSH												
1885	JADHAV RUSHIKESH DILIP												
1886	KADAM SATYAJEET KUMAR												
1887	KATE VIKRAM JAGNNATH												
1888	KAULE ANIKET VASANT												
1889	KUMBHAR SHIVRAJ VILAS												
1890	LAD YOGESHWAR ASHOK												
1891	MOHITE AJAY RAGHUNATH												
1892	MORE PAWAN SURESH												
1893	MULLA AKRAM SHAMSHUDDIN												
1894	PATHAN SOHEL AKIL												
1895	PATIL AISHWARYA SATISH												
1896	PATIL ANIKET RAJENDRA												
1897	PATIL PRATAP BALASO												

1898	PATIL SUMIT ISHWAR	P	P	P	P	P	P	P	P	P	P	P	P
1899	SAWANT SHUBHAM SANJAY	P	P	P	P	P	P	P	P	P	P	P	P
1900	SHINDE SAGAR SHANKAR	P	P	P	P	P	P	P	P	P	P	P	P

Jan 2021 Attendance Praticals Time 2 pm to 5 pm

Roll No	Name of Students	9	23
1851	BABAR AMRUTA ANKUSH	P	P
1852	CHAVAN ANIKET ANIL	P	P
1853	CHAVAN PRAJAKTA VITTHAL	P	P
1854	CHOUGULE SANKET ASHOK	P	P
1855	HOWAL OMKAR VIKAS	P	P
1856	JADHAV ABHISHEK ARUN	P	P
1857	JADHAV MONIKA ASHOK	P	P
1858	JADHAV POOJA ANANDA	P	P
1859	JADHAV PRIYANKA POPAT	P	P
1860	JADHAV SALONI BAJARANG	P	P
1861	JADHAV YOGITA SUBHASH	P	P
1862	KAMBLE HARSHADA VISHWANATH	P	P
1863	KAMBLE PADMAJA CHANDRAKANT	P	P
1864	KOLI OMKAR SADASHIV	P	P
1865	KUMBHAR GANESH DHANAJI	P	P
1866	KUMBHAR PRATIKSHA LAXMAN	P	P
1867	MANE AMIT SUBHASH	P	P
1868	MOHITE SHWETA DILIP	P	P
1869	MUJAWAR PARVEJ HARUN	P	P
1870	MULANI SABIR ZAKIR	P	P
1871	MULANI SUJAN ZAKIR	P	P

1872	MULIK TEJASWINI PRAKASH	P	P
1873	PATIL KOMAL SUDHIR	P	P
1874	PATIL PRAJAKTA ANANDRAO	P	P
1875	PATIL RITESH RAJENDRA	P	P
1876	PATIL RUTUJA DAGADU	P	P
1877	PATIL VIBHUTI VISHWASRAO	P	P
1878	RADE MEGHA ASHOK	P	P
1879	SAWANT PIYUSHA SHANTANU	P	P
1880	SAWANT SHUBHAM BHARAT	P	P
1881	SAWAT ANIKET HANMANT	P	P
1882	YAMGAR MAYURI ANIL	P	P
1883	AUTE MAHESH GANPATRAO	P	P
1884	BABAR ANIKET ANKUSH	P	P
1885	JADHAV RUSHIKESH DILIP	P	P
1886	KADAM SATYAJEET KUMAR	P	P
1887	KATE VIKRAM JAGNNATH	P	P
1888	KAULE ANIKET VASANT	P	P
1889	KUMBHAR SHIVRAJ VILAS	P	P
1890	LAD YOGESHWAR ASHOK	P	P
1891	MOHITE AJAY RAGHUNATH	P	P
1892	MORE PAWAN SURESH	P	P
1893	MULLA AKRAM SHAMSHUDDIN	P	P
1894	PATHAN SOHEL AKIL	P	P
1895	PATIL AISHWARYA SATISH	P	P
1896	PATIL ANIKET RAJENDRA	P	P
1897	PATIL PRATAP BALASO	P	P
1898	PATIL SUMIT ISHWAR	P	P

Rayat Shikshan Sanstha's
Dr. Patangrao Kadam Mahavidyalaya, Ramanandnagar (Burli),
Department of Chemistry
Year: 2020-2021
Value Added Course on
Analytical Methods in Chemistry
Feb 2021 Attendance Theory Time 10 am to 11 am

Roll No	Name of Students	2	4	6	9	11	13	16	18	20	23	25	27
1851	BABAR AMRUTA ANKUSH	P	P	P	P	P	P	P	P	P	P	P	P
1852	CHAVAN ANIKET ANIL	P	P	P	P	P	P	P	P	P	P	P	P
1853	CHAVAN PRAJAKTA VITTHAL	P	P	P	P	P	P	P	P	P	P	P	P
1854	CHOUGULE SANKET ASHOK	P	P	P	P	P	P	P	P	P	P	P	P
1855	HOWAL OMKAR VIKAS	P	P	P	P	P	P	P	P	P	P	P	P
1856	JADHAV ABHISHEK ARUN	P	P	P	P	P	P	P	P	P	P	P	P
1857	JADHAV MONIKA ASHOK	P	P	P	P	P	P	P	P	P	P	P	P
1858	JADHAV POOJA ANANDA	P	P	P	P	P	P	P	P	P	P	P	P
1859	JADHAV PRIYANKA POPAT	P	P	P	P	P	P	P	P	P	P	P	P
1860	JADHAV SALONI BAJARANG	P	P	P	P	P	P	P	P	P	P	P	P
1861	JADHAV YOGITA SUBHASH	P	P	P	P	P	P	P	P	P	P	P	P
1862	KAMBLE HARSHADA VISHWANATH	P	P	P	P	P	P	P	P	P	P	P	P
1863	KAMBLE PADMAJA CHANDRAKANT	P	P	P	P	P	P	P	P	P	P	P	P
1864	KOLI OMKAR SADASHIV	P	P	P	P	P	P	P	P	P	P	P	P
1865	KUMBHAR GANESH DHANAJI	P	P	P	P	P	P	P	P	P	P	P	P
1866	KUMBHAR PRATIKSHA LAXMAN	P	P	P	P	P	P	P	P	P	P	P	P
1867	MANE AMIT SUBHASH	P	P	P	P	P	P	P	P	P	P	P	P
1868	MOHITE SHWETA DILIP	P	P	P	P	P	P	P	P	P	P	P	P
1869	MUJAWAR PARVEJ HARUN	P	P	P	P	P	P	P	P	P	P	P	P
1870	MULANI SABIR ZAKIR	P	P	P	P	P	P	P	P	P	P	P	P

1871	MULANI SUJAN ZAKIR	P	P	P	P	P	P	P	P	P	P	P	P
1872	MULIK TEJASWINI PRAKASH	P	P	P	P	P	P	P	P	P	P	P	P
1873	PATIL KOMAL SUDHIR	P	P	P	P	P	P	P	P	P	P	P	P
1874	PATIL PRAJAKTA ANANDRAO	P	P	P	P	P	P	P	P	P	P	P	P
1875	PATIL RITESH RAJENDRA	P	P	P	P	P	P	P	P	P	P	P	P
1876	PATIL RUTUJA DAGADU	P	P	P	P	P	P	P	P	P	P	P	P
1877	PATIL VIBHUTI VISHWASRAO	P	P	P	P	P	P	P	P	P	P	P	P
1878	RADE MEGHA ASHOK	P	P	P	P	P	P	P	P	P	P	P	P
1879	SAWANT PIYUSHA SHANTANU	P	P	P	P	P	P	P	P	P	P	P	P
1880	SAWANT SHUBHAM BHARAT	P	P	P	P	P	P	P	P	P	P	P	P
1881	SAWAT ANIKET HANMANT	P	P	P	P	P	P	P	P	P	P	P	P
1882	YAMGAR MAYURI ANIL	P	P	P	P	P	P	P	P	P	P	P	P
1883	AUTE MAHESH GANPATRAO	P	P	P	P	P	P	P	P	P	P	P	P
1884	BABAR ANIKET ANKUSH	P	P	P	P	P	P	P	P	P	P	P	P
1885	JADHAV RUSHIKESH DILIP	P	P	P	P	P	P	P	P	P	P	P	P
1886	KADAM SATYAJEET KUMAR	P	P	P	P	P	P	P	P	P	P	P	P
1887	KATE VIKRAM JAGNNATH	P	P	P	P	P	P	P	P	P	P	P	P
1888	KAULE ANIKET VASANT	P	P	P	P	P	P	P	P	P	P	P	P
1889	KUMBHAR SHIVRAJ VILAS	P	P	P	P	P	P	P	P	P	P	P	P
1890	LAD YOGESHWAR ASHOK	P	P	P	P	P	P	P	P	P	P	P	P
1891	MOHITE AJAY RAGHUNATH	P	P	P	P	P	P	P	P	P	P	P	P
1892	MORE PAWAN SURESH	P	P	P	P	P	P	P	P	P	P	P	P
1893	MULLA AKRAM SHAMSHUDDIN	P	P	P	P	P	P	P	P	P	P	P	P
1894	PATHAN SOHEL AKIL	P	P	P	P	P	P	P	P	P	P	P	P
1895	PATIL AISHWARYA SATISH	P	P	P	P	P	P	P	P	P	P	P	P
1896	PATIL ANIKET RAJENDRA	P	P	P	P	P	P	P	P	P	P	P	P
1897	PATIL PRATAP BALASO	P	P	P	P	P	P	P	P	P	P	P	P

Rayat Shikshan Sanstha's
Dr. Patangrao Kadam Mahavidyalaya, Ramanandnagar (Burli),
Department of Chemistry
Year: 2020-2021
Value Added Course on
Analytical Methods in Chemistry
Mar To April 2021 Attendance Practical Time 2 to 5

Roll No	Name of Students	6	3	3	17
1851	BABAR AMRUTA ANKUSH	P	P	P	P
1852	CHAVAN ANIKET ANIL	P	P	P	P
1853	CHAVAN PRAJAKTA VITTHAL	P	P	P	P
1854	CHOUGULE SANKET ASHOK	P	P	P	P
1855	HOWAL OMKAR VIKAS	P	P	P	P
1856	JADHAV ABHISHEK ARUN	P	P	P	P
1857	JADHAV MONIKA ASHOK	P	P	P	P
1858	JADHAV POOJA ANANDA	P	P	P	P
1859	JADHAV PRIYANKA POPAT	P	P	P	P
1860	JADHAV SALONI BAJARANG	P	P	P	P
1861	JADHAV YOGITA SUBHASH	P	P	P	P
1862	KAMBLE HARSHADA VISHWANATH	P	P	P	P
1863	KAMBLE PADMAJA CHANDRAKANT	P	P	P	P
1864	KOLI OMKAR SADASHIV	P	P	P	P
1865	KUMBHAR GANESH DHANAJI	P	P	P	P
1866	KUMBHAR PRATIKSHA LAXMAN	P	P	P	P
1867	MANE AMIT SUBHASH	P	P	P	P
1868	MOHITE SHWETA DILIP	P	P	P	P
1869	MUJAWAR PARVEJ HARUN	P	P	P	P
1870	MULANI SABIR ZAKIR	P	P	P	P

1871	MULANI SUJAN ZAKIR	P	P	P	P
1872	MULIK TEJASWINI PRAKASH	P	P	P	P
1873	PATIL KOMAL SUDHIR	P	P	P	P
1874	PATIL PRAJAKTA ANANDRAO	P	P	P	P
1875	PATIL RITESH RAJENDRA	P	P	P	P
1876	PATIL RUTUJA DAGADU	P	P	P	P
1877	PATIL VIBHUTI VISHWASRAO	P	P	P	P
1878	RADE MEGHA ASHOK	P	P	P	P
1879	SAWANT PIYUSHA SHANTANU	P	P	P	P
1880	SAWANT SHUBHAM BHARAT	P	P	P	P
1881	SAWAT ANIKET HANMANT	P	P	P	P
1882	YAMGAR MAYURI ANIL	P	P	P	P
1883	AUTE MAHESH GANPATRAO	P	P	P	P
1884	BABAR ANIKET ANKUSH	P	P	P	P
1885	JADHAV RUSHIKESH DILIP	P	P	P	P
1886	KADAM SATYAJEET KUMAR	P	P	P	P
1887	KATE VIKRAM JAGNNATH	P	P	P	P
1888	KAULE ANIKET VASANT	P	P	P	P
1889	KUMBHAR SHIVRAJ VILAS	P	P	P	P
1890	LAD YOGESHWAR ASHOK	P	P	P	P
1891	MOHITE AJAY RAGHUNATH	P	P	P	P
1892	MORE PAWAN SURESH	P	P	P	P
1893	MULLA AKRAM SHAMSHUDDIN	P	P	P	P
1894	PATHAN SOHEL AKIL	P	P	P	P
1895	PATIL AISHWARYA SATISH	P	P	P	P
1896	PATIL ANIKET RAJENDRA	P	P	P	P
1897	PATIL PRATAP BALASO	P	P	P	P

1898	PATIL SUMIT ISHWAR	P	P	P	P
1899	SAWANT SHUBHAM SANJAY	P	P	P	P
1900	SHINDE SAGAR SHANKAR	P	P	P	P

Head of Dept.
Department of Chemistry
Dr. Patangrao Kadam Mahavidhyalaya,
Ramanand

Rayat Shikshan Sanstha's
Dr.Patangrao KadamMahavidyalaya , Ramanandnagar (Burli),
Tal.-Palus, Dist. - Sangli.
Department of Chemistry
Value Added Course
Student List 2020-2021
Exam Presenty Report

Sr.No	Roll No	Name of Students	27/02/2021
1	1851	BABAR AMRUTA ANKUSH	P
2	1852	CHAVAN ANIKET ANIL	P
3	1853	CHAVAN PRAJAKTA VITTHAL	P
4	1854	CHOUGULE SANKET ASHOK	P
5	1855	HOWAL OMKAR VIKAS	P
6	1856	JADHAV ABHISHEK ARUN	P
7	1857	JADHAV MONIKA ASHOK	P
8	1858	JADHAV POOJA ANANDA	P
9	1859	JADHAV PRIYANKA POPAT	P
10	1860	JADHAV SALONI BAJARANG	P
11	1861	JADHAV YOGITA SUBHASH	P
12	1862	KAMBLE HARSHADA VISHWANATH	P
13	1863	KAMBLE PADMAJA CHANDRAKANT	P
14	1864	KOLI OMKAR SADASHIV	P
15	1865	KUMBHAR GANESH DHANAJI	P
16	1866	KUMBHAR PRATIKSHA LAXMAN	P
17	1867	MANE AMIT SUBHASH	P
18	1868	MOHITE SHWETA DILIP	P
19	1869	MUJAWAR PARVEJ HARUN	P
20	1870	MULANI SABIR ZAKIR	P
21	1871	MULANI SUJAN ZAKIR	P
22	1872	MULIK TEJASWINI PRAKASH	P
23	1873	PATIL KOMAL SUDHIR	P
24	1874	PATIL PRAJAKTA ANANDRAO	P

25	1875	PATIL RITESH RAJENDRA	P
26	1876	PATIL RUTUJA DAGADU	P
27	1877	PATIL VIBHUTI VISHWASRAO	P
28	1878	RADE MEGHA ASHOK	P
29	1879	SAWANT PIYUSHA SHANTANU	P
30	1880	SAWANT SHUBHAM BHARAT	P
31	1881	SAWAT ANIKET HANMANT	P
32	1882	YAMGAR MAYURI ANIL	P
33	1883	AUTE MAHESH GANPATRAO	P
34	1884	BABAR ANIKET ANKUSH	P
35	1885	JADHAV RUSHIKESH DILIP	P
36	1886	KADAM SATYAJEET KUMAR	P
37	1887	KATE VIKRAM JAGNNATH	P
38	1888	KAULE ANIKET VASANT	P
39	1889	KUMBHAR SHIVRAJ VILAS	P
40	1890	LAD YOGESHWAR ASHOK	P
41	1891	MOHITE AJAY RAGHUNATH	P
42	1892	MORE PAWAN SURESH	P
43	1893	MULLA AKRAM SHAMSHUDDIN	P
44	1894	PATHAN SOHEL AKIL	P
45	1895	PATIL AISHWARYA SATISH	P
46	1896	PATIL ANIKET RAJENDRA	P
47	1897	PATIL PRATAP BALASO	P
48	1898	PATIL SUMIT ISHWAR	P
49	1899	SAWANT SHUBHAM SANJAY	P
50	1900	SHINDE SAGAR SHANKAR	P

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

Rayat Shikshan Sanstha's
Dr.Patangrao KadamMahavidyalaya , Ramanandnagar (Burli),
Tal.-Palus, Dist. - Sangli.
Department of Chemistry
Add On Course
Student List 2020-2021
Exam Result

Sr.No	Roll No	Name of Students	Marks (100)
1	1851	BABAR AMRUTA ANKUSH	86
2	1852	CHAVAN ANIKET ANIL	88
3	1853	CHAVAN PRAJAKTA VITTHAL	90
4	1854	CHOUGULE SANKET ASHOK	82
5	1855	HOWAL OMKAR VIKAS	88
6	1856	JADHAV ABHISHEK ARUN	88
7	1857	JADHAV MONIKA ASHOK	88
8	1858	JADHAV POOJA ANANDA	88
9	1859	JADHAV PRIYANKA POPAT	88
10	1860	JADHAV SALONI BAJARANG	88
11	1861	JADHAV YOGITA SUBHASH	90
12	1862	KAMBLE HARSHADA VISHWANATH	92
13	1863	KAMBLE PADMAJA CHANDRAKANT	80
14	1864	KOLI OMKAR SADASHIV	80
15	1865	KUMBHAR GANESH DHANAJI	82
16	1866	KUMBHAR PRATIKSHA LAXMAN	84
17	1867	MANE AMIT SUBHASH	84
18	1868	MOHITE SHWETA DILIP	86
19	1869	MUJAWAR PARVEJ HARUN	82
20	1870	MULANI SABIR ZAKIR	86
21	1871	MULANI SUJAN ZAKIR	84
22	1872	MULIK TEJASWINI PRAKASH	82
23	1873	PATIL KOMAL SUDHIR	92
24	1874	PATIL PRAJAKTA ANANDRAO	90
25	1875	PATIL RITESH RAJENDRA	92

26	1876	PATIL RUTUJA DAGADU	94
27	1877	PATIL VIBHUTI VISHWASRAO	80
28	1878	RADE MEGHA ASHOK	90
29	1879	SAWANT PIYUSHA SHANTANU	82
30	1880	SAWANT SHUBHAM BHARAT	84
31	1881	SAWAT ANIKET HANMANT	86
32	1882	YAMGAR MAYURI ANIL	88
33	1883	AUTE MAHESH GANPATRAO	86
34	1884	BABAR ANIKET ANKUSH	80
35	1885	JADHAV RUSHIKESH DILIP	84
36	1886	KADAM SATYAJEET KUMAR	80
37	1887	KATE VIKRAM JAGNNATH	90
38	1888	KAULE ANIKET VASANT	86
39	1889	KUMBHAR SHIVRAJ VILAS	88
40	1890	LAD YOGESHWAR ASHOK	88
41	1891	MOHITE AJAY RAGHUNATH	90
42	1892	MORE PAWAN SURESH	84
43	1893	MULLA AKRAM SHAMSHUDDIN	86
44	1894	PATHAN SOHEL AKIL	88
45	1895	PATIL AISHWARYA SATISH	90
46	1896	PATIL ANIKET RAJENDRA	88
47	1897	PATIL PRATAP BALASO	82
48	1898	PATIL SUMIT ISHWAR	86
49	1899	SAWANT SHUBHAM SANJAY	88
50	1900	SHINDE SAGAR SHANKAR	80

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

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"
2020-2021

CERTIFICATE

This is to certify that Mr. /Mrs. /Miss. _____ 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 2020-2021.

Mr. Y. R. Sable Course Incharge	Dr. V. B. Patil Head of Department	Dr. L. D. Kadam 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: 2020-2021

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 50 students admitted for this course. The course is for the 100 marks. In this course we thought three papers viz.

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 2020-2021

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 50

Course student prepared some chemicals through this course

Student doing analysis of the some Household chemicals

Head of Department

Principal

Dr. Patangrao Kadam Mahavidyalaya,

Ramanandnagar (Burli)