

“ ज्ञान, विज्ञान आणि सुसंस्कार यांसाठी शिक्षण प्रसार ”

‡ शिक्षणमहर्षी डॉ. वापूजी साळुंके

Shri Swami Vivekanand Shikshan Sanstha, Kolhapur

**PADMABHUSHAN DR. VASANTRAODADA PATIL  
MAHAVIDYALAYA, TASGAON**

(AFFILIATED TO SHIVAJI UNIVERSITY, KOLHAPUR)

# **Department of Chemistry**

**Certificate Course  
in  
Analytical Techniques**

**2016-17**

**Certificate Course  
in  
Analytical Techniques**

**2016-17**

Duration : August 2016 – October 2016

Number of students : 122

Male : 59 Female : 63

*Certificate Course in Laboratory  
Management And  
Analytical Techniques.  
(LMAT)*

- **Duration of Course** : 3 months
- Eligibility** : XII Science.
- Theory Paper** : Two Papers of 50 marks each.
- Practical** : One Practical of 50 marks.

| <b>Course Code</b> | <b>Title of Theory Course</b>          | <b>Marks</b> |
|--------------------|--|--------------|
| I                  | Laboratory Management                  | 50           |
| II                 | Fundamentals in Analytical Techniques. | 50           |
| Practical          | Practical Course                       | 50           |



“ज्ञान, विज्ञान आणि सुसंस्कार यांसाठी शिक्षणप्रसार” - शिक्षणमहर्षी डॉ. बापूजी साळुंखे

Shri Swami Vivekanand Shikshan Sanstha, Kolhapur's

**PADMABHUSHAN DR. VASANTRAODADA PATIL MAHAVIDYALAYA**

TASGAON, Dist. Sangli, Pin- 416 312 ☎ - STD : 02346-250665, 250575 FAX : 250575

• Affiliated to Shivaji University, Kolhapur •

E-mail : san.pdvpm.tas@gmail.com Website : www.pdvpmtasgaon.edu.in



NAAC Reaccredited 'B' (2.76)

Established Year : June 1962 P. B. No. : 14 Jr. College No. : J22-10-001 Sr. College Code No. :  $\frac{SI/AC/4}{X}$  Jr.: C-8

**Shikshanmaharshi  
Dr. Bapuji Salunkhe**  
B.A., B.T., D.Lit.  
FOUNDER

**Hon. Chandrakant (Dada) Patil**  
PRESIDENT B.Com.  
Minister of Revenue, Public Works  
Govt. of Maharashtra

**Prin. Abhaykumar Salunkhe**  
M.A.  
CHAIRMAN

**Prin. Mrs. Shubhangi Gawade**  
M.Sc. B.Ed.  
SECRETARY

**Dr. R. R. Kumbhar**  
M.Sc. M.Phil., Ph.D.  
PRINCIPAL

Ref.No. : PDVPMT /

Date : 07/07/2016

To,

**Dr. S. S. Patil**  
Department of Chemistry  
P.D.V.P. College, Tasgaon.

**Sub.:- BOS/Syllabus Committee Meeting**

Sir,

You are appointed as Member of Board of Studies (BOS) in Certificate Course in **Certificate Course in Laboratory Management and Analytical Techniques** to be conducted in our college from academic year 2016-17.

  
IQAC Director

  
Principal  
P.D.V.P. College, Tasgaon  
Mahavidyalaya, Tasgaon. (Sangli)





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Dr. R. R. Kumbhar  
M.Sc. M.Phil., Ph.D.  
PRINCIPAL

Ref.No. : PDVPMT /

Date : 07/07/2016

To,

Dr. S. D. Jadhav  
Department of Chemistry  
P.D.V.P. College, Tasgaon.

Sub.:- BOS/Syllabus Committee Meeting

Sir,

You are appointed as Member of Board of Studies (BOS) in Certificate Course in **Certificate Course in Laboratory Management and Analytical Techniques** to be conducted in our college from academic year 2016-17.

  
IQAC Director

  
Principal  
PDVP College, Tasgaon  
Padmabhushan Dr. Vasant Rao Dada Patil  
Mahavidyalaya, Tasgaon. (Sangli)



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SECRETARY

Dr. R. R. Kumbhar  
M.Sc. M.Phil., Ph.D.  
PRINCIPAL

Ref.No. : PDVPMT /

Date : 07/07/2016

To,


Ms. M. U. Patil  
Department of Chemistry  
P.D.V.P. College, Tasgaon.

Sub.:- BOS/Syllabus Committee Meeting

Sir,

You are appointed as Member of Board of Studies (BOS) in Certificate Course in Certificate Course in Laboratory Management and Analytical Techniques to be conducted in our college from academic year 2016-17.

  
IQAC Director

  
Principal  
PDVPM College, Tasgaon  
Padmabhushan Dr. Vasantodada Patil  
Mahavidyalaya, Tasgaon, (Sangli)





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SECRETARY

**Dr. R. R. Kumbhar**  
M.Sc. M.Phil., Ph.D.  
PRINCIPAL

Ref.No. : PDVPMT /

Date : 07/07/2016

To,


**Mr. A. N. Ambhore**  
Department of Chemistry  
S. M. D. B. S. College, Miraj.

**Sub.:- BOS/Syllabus Committee Meeting**

Sir,

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IQAC Director

  
Principal  
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Mahavidyalaya, Tasgaon. (Sangli)



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**Dr. R. R. Kumbhar**  
M.Sc. M.Phil., Ph.D.  
PRINCIPAL

Ref.No. : PDVPMT /

Date : 07/07/2016

To,

**Mr. S. P. Patil**  
Department of Chemistry  
P.D.V.P. College, Tasgaon.

**Sub.:- BOS/Syllabus Committee Meeting**

Sir,

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IQAC Director

  
Principal  
PDVP College, Tasgaon  
Mahavidyalaya, Tasgaon. (Sangli)



## Paper I : Laboratory Management

| Sr No | Name of Topics   | Hours |
|-------|--|-------|
| 1     | <b>Safety and Precaution in Laboratory</b> <ol style="list-style-type: none"> <li>1. Oral instruction and information</li> <li>2. Disposal of toxic and hazards chemicals / waste.</li> <li>3. Fire extinguisher, use of mask aprons handgloves, gumboots.</li> <li>4. Lab infrastructures-ventilation, tabletops, floors, waste water management, laboratory maintenances, training to staff.</li> <li>5. First aid box contents and use.</li> </ol>  | 4     |
| 2     | <b>Quality Control Management in Laboratory</b> <ol style="list-style-type: none"> <li>1. Fundamentals in analysis.</li> <li>2. Standardization of solutions</li> <li>3. Calibration of Glass ware and instruments.</li> <li>4. Preparation of reagents.</li> <li>5. Cross analysis.</li> <li>6. Purchase of standard quality Chemicals.</li> <li>7. Purity checking of Chemicals.</li> <li>8. Accuracy and Precession                     <ul style="list-style-type: none"> <li>Determination of accuracy of quantitative methods.</li> <li>- absolute method and comparative method.</li> </ul> </li> </ol> | 4     |
| 3     | <b>Fundamentals of Sampling Methods</b> <ol style="list-style-type: none"> <li>1. Representative sampling techniques.</li> <li>2. Sampling methods for different samples – Food, Water, soil, Fertilizer, Pharmaceuticals, Agricultural products.</li> <li>3. Theory of sampling</li> <li>4. Techniques of sampling</li> <li>5. Sampling preservation techniques.</li> </ol>   | 4     |
| 4     | <b>Mathematical Calculations in Laboratory.</b> <ol style="list-style-type: none"> <li>1. Concentration calculations, ppm, ppb, mg/l, Kg/ha, Molar, <math>\mu\text{g}/100\text{ gm}</math> etc. calculations.</li> <li>2. Dilution Techniques and calculation, serial dilution techniques.</li> <li>3. Unit conversions.</li> </ol>  | 3     |

## Paper II : Fundamentals in Analytical Techniques.

|   |   |   |
|---|---|---|
| 1 | <b>Typical Procedures of Analysis.</b> <ol style="list-style-type: none"> <li>1. Different analytical Techniques- a) Qualitative b) Quantitative-introduction and principal.</li> </ol> | 4 |
|---|---|---|

|   |  |   |
|---|--|---|
|   | <ol style="list-style-type: none"> <li>2. Fundamentals in Analysis- Chemical, Physical and Biological Methods.</li> <li>3. Analytical work for different samples- eg. Soil, water, Food, Milk, Fertilizer, Environmental, Industrial etc.</li> <li>4. Selection of suitable method for analysis.</li> </ol>  |   |
| 2 | <p><b>Errors in Analysis</b></p> <ol style="list-style-type: none"> <li>1. Definition of – Absolute error, accuracy, Relative error, precision (Explanation with suitable examples)</li> <li>2. Classification of Errors (a) Determinate Errors – Operational &amp; Personal errors, Instrumental &amp; Reagent errors, Errors of method, Additive &amp; proportional errors. (b) Indeterminate or accidental errors</li> <li>3. Minimization of Errors – (in brief) <ol style="list-style-type: none"> <li>a) Calibration of apparatus</li> <li>b) Running blank determination</li> <li>c) Running control determination</li> <li>d) Use of independent method of analysis</li> <li>e) Running of parallel determination / cross checks.</li> <li>f) Standard addition method</li> <li>g) Isotopic dilution method</li> </ol> </li> <li>4. Significant figures, computation of results &amp; computation rules</li> </ol> | 5 |
| 3 | <p><b>Report presentation and interpretation of results.</b></p> <ol style="list-style-type: none"> <li>1. Different Standards- like IP, BP, BSI(ISI), FCO, FPO, WHO, IS, ISO. Definition and explanation with typical example.</li> <li>2. Presentation methods- Graphical, tabular, Comparative, Pictorial.</li> </ol>   | 4 |
| 4 | Communication skill & personality Development  | 2 |

## Practicals

1. Estimation of Vitamin C.
2. Estimation of Aspirin
3. Estimation of Caffeine from coffee
4. Estimation of copper and nickel contents in cupronickel alloy.
5. Estimation Calcium from Calcium tablets and milk sample by Complexometry.
6. Food adulterations – i) chilly powder ii) Turmeric Powder iii) Tea powder iv) Butter and oil v) Paper seeds vi) Pissa sugar
7. Soil analysis i) Organic carbon of soil ii) pH and EC.

## **Reference Books:-**

1. Instrumental method of Chemical analysis Chatwal-Anand (Himalaya Pub. House)
2. Qualitative Analysis by A. I. Vogel
3. Standard methods of Chemical Analysis by Welcher F. J.
4. Chemical Methods of analysis by Snell F. D. and Biffen F. N.
5. Basic Concept of Analytical Chemistry by S. M. Khopkar.
6. Chemical Methods of Separation by J. A. Dean.
7. Fundamentals of Analytical Chemistry by Skoog D. A. and West D. M.



Shri Swami Vivekanand Shikshan Sanstha Kolhapur  
Padmabhushan Dr. Vasantodada Patil Mahavidyalaya, Tasgaon

**PG Department of Chemistry**  
**Notice**

Date : 25/07/2016

*Certificate Course in Laboratory  
Management And  
Analytical Techniques*

B. Sc. III Chemistry students are hereby informed that we are going to conduct  
**Certificate Course in Laboratory Management and Analytical Techniques.**

✓ This course includes

- Fundamentals in Laboratory Management
- Fundamentals in Analytical Chemistry

✓ The students can register their names upto 29<sup>th</sup> July 2016.



Dr. S. S. Patil  
Head of ~~the~~ Department  
Dept. of Chemistry  
P.D.V.P. College, Tasgaon

**PG Department of Chemistry**  
**Certificate Course in Laboratory Management**  
**and Analytical Techniques**

**2016-17**

**List of Students**

| Sr. No. | Name Of The Student           | Sr. No. | Name Of The Student          |
|---------|-------------------------------|---------|------------------------------|
| 1       | Mane Rushikesh Pradip         | 62      | Lokhande Ashwini Chandrakant |
| 2       | Khandare Mahadev Prakash      | 63      | Shinde Madhuri Ananda        |
| 3       | Patil Akshay Vijay            | 64      | Pawar Swapnali Laxman        |
| 4       | Patil Pradnya Anand           | 65      | Koli Rupali Subhash          |
| 5       | Sutar Sachin Subhash          | 66      | More Sonali Umaji            |
| 6       | Patil Hemlata Bhaskar         | 67      | Lohar Anita Ramchandra       |
| 7       | Patil Jaydeep Krishnadev      | 68      | Gosavi Deepali Manik         |
| 8       | Mohite Pavan Anil             | 69      | Mali Purnima Mahipati        |
| 9       | Patil Supriya Popat           | 70      | Mali Rupali Prakash          |
| 10      | Shinde Ashwini Pratap         | 71      | More Pranil Khandu           |
| 11      | Bhosale Vidhyarani Shahai     | 72      | Mali Suraj Arun              |
| 12      | Patil Indrajeet Tanaji        | 73      | Sadakale Tushar Jagannath    |
| 13      | Yadav Sagar Durvas            | 74      | Sadakale Rudrakash Lakshman  |
| 14      | Disale Shivani Chandrashekhar | 75      | Nikam Akshay Raosaheb        |
| 15      | Karvanje Ravindra Gangaram    | 76      | Sutar Suyash Sudhakar        |
| 16      | Mokale Trupti Appasaheb       | 77      | Koli Sagar Shivaji           |
| 17      | Jamadade Akshaykumar Vilas    | 78      | Patil Shehal Haribhau        |
| 18      | Adsul Sandeep Sambhaji        | 79      | Patil Aishwarya Ravasaheb    |
| 19      | Ghare Nilesh Sanjay           | 80      | Petkar Shridhar Someshwar    |



|    |                            |     |                            |
|----|----------------------------|-----|----------------------------|
| 20 | Mali Swapnali Narayan      | 81  | Suryawanshi Seema Dnyandeo |
| 21 | Kharade Poonam Gulabrao    | 82  | Gholap Ashish Ganpati      |
| 22 | Patil Akshata Adhikrao     | 83  | Mane Megha Prakash         |
| 23 | Patil Aishwarya Vitthal    | 84  | Chavan Shital Shahaji      |
| 24 | Salunkhe Sangharsh Netaji  | 85  | Pawar Sayali Pralhad       |
| 25 | Mali Vijay Shivaji         | 86  | Pawar Sonali Anandrao      |
| 26 | Mali Vijay Dashrath        | 87  | Nalawade Swapnil Sopan     |
| 27 | Chougule Ashwini Dhondiram | 88  | Patil Sarita Raghunath     |
| 28 | Mulik Swapnali Mukund      | 89  | Mane Pooja Ashok           |
| 29 | Patil Komal Sahadev        | 90  | Patil Vidyarani Rajaram    |
| 30 | Jadhav Swapnali Mahadev    | 91  | Kadam Namrata Uttam        |
| 31 | Jamadade Rutuja Dilip      | 92  | Patil Sagar Ravasaheb      |
| 32 | Budhawale Sonali Savanta   | 93  | Chavan Niteen Vitthal      |
| 33 | More Vaibhav Balkrishana   | 94  | Pawar Komal Prakash        |
| 34 | Shintre Rohit Sanjay       | 95  | Patil Prashant Balaso      |
| 35 | Patil Gouri Pratap         | 96  | Shinde Mayavati Sambhaji   |
| 36 | Patil Pradip Pandurang     | 97  | Patil Pradip Sanjay        |
| 37 | Shendage Pratiksha Narayan | 98  | Zambre Rohit Sanjay        |
| 38 | Tamkhade Archana Hanmant   | 99  | Pawar Prasad Narayan       |
| 39 | Jadhav Raturani Raghunath  | 100 | Mali Shivambhu Chandrakant |
| 40 | Shivpuje Umesh Revan       | 101 | Patil Pranoti Pramod       |
| 41 | Nalawade Tejas Mahipati    | 102 | Mujawar Iqbal Babalal      |
| 42 | Gijare Komal Shankar       | 103 | Ghule Sumit Rajendra       |
| 43 | Patil Nikita Manik         | 104 | Hasabe Suraj Ashok         |
| 44 | Patil Onkar Dilip          | 105 | Jadhav Akshay Arjun        |
| 45 | Salunkhe Nikhil Mohan      | 106 | Jadhav Amruta Pralhad      |
| 46 | Mali Asmita Shrikant       | 107 | Ghodake Vijay Balaso       |
| 47 | Patil Komal Tanaji         | 108 | Patil Supriya Vishwanath   |
| 48 | Potdar Vinod Pandurang     | 109 | Jadhav Abhinay Dagadu      |
| 49 | Patil Rushikesh Ravindra   | 110 | Mirajkar Jitendra Suresh   |
| 50 | Chavan Santosh Rajaram     | 111 | Mane Pravin Prakash        |



|    |                          |     |                           |
|----|--------------------------|-----|---------------------------|
| 51 | Chavan Kuldip Sambhaji   | 112 | Momin Alim Naushad        |
| 52 | Dhabugade Sayali Prakash | 113 | Patil Shweta Sanjay       |
| 53 | Mali Poonam Suresh       | 114 | Patil Smita Sanjay        |
| 54 | Patil Ashwini Jalindar   | 115 | Balugade Ragini Arun      |
| 55 | Patil Tejashree Vishnu   | 116 | Jadhav Swapnali Jagannath |
| 56 | Mhetre Pranav Prakash    | 117 | Bhosale Abhijeet Sambhaji |
| 57 | Sutar Akshay Gajanan     | 118 | Harale Ramchandra Pralhad |
| 58 | Ghewari Vivek Rajkumar   | 119 | Mali Pooja Ramchandra     |
| 59 | Chavan Prajakta Mahadev  | 120 | Jadhav Akshay Ajit        |
| 60 | Yadav Vijay Rajaram      | 121 | Mane Dhanashri Pandurang  |
| 61 | Shendage Bhauso Tukaram  | 122 | Patil Varsharani Suresh   |

  
Head

Dept. of Chemistry  
P.D.V.P. College, Tatyasa

**Shri Swami Vivekanand Shikshan Sanstha's**

**Padmabhushan Dr. Vasantodada Patil Mahavidyalaya, Targaon, Dist-Sangli.  
Certificate Course in Laboratory Management and Analytical Techniques  
2016-17**

**Time-Table**

| Period | Time                     | MONDAY | TUESDAY | WEDNESDAY | THURSDAY | FRIDAY     | SATURDAY   |
|--------|--------------------------|--------|---------|-----------|----------|------------|------------|
| 1      | 2.00 pm<br>To<br>3.00 pm | SDJ    | AAP     | SDJ       | AAP      | SDJ<br>(P) | MUP<br>(P) |
| 2      | 3.00 pm<br>To<br>4.00 pm | MUP    | ASK     | MUP       | ASK      |            |            |

*Patil*

**Dr. S. S. Patil**  
Head of the Department

**Dept. of Chemistry**  
P.D.V.P. College, Targaon



|     |                            |          |
|-----|----------------------------|----------|
| 17  | Patil Sarita Raghunath.    | SPRHL    |
| 2)  | patil Supriya Vishwanath   | SPRHL    |
| 3)  | Kharade Poonam Gulabarao.  | Pharade  |
| 4)  | Kazi Afroz Dastagir        | RAZIAN   |
| 5)  | Patil Kamal Sahadev        | Patil    |
| 6)  | Mali sonali sudhakar       | Smali    |
| 7)  | mali Swapnali Narayam      | Smali    |
| 8)  | Mali pournima Mahipati     | Patil    |
| 9)  | kharmate Shital. S.        | SK       |
| 10) | Jadhav Swapnali Jagannath  | Jadhav   |
| 11) | Gosoki Deepali Manik       | DLG      |
| 12) | Mane Pooja Ashok           | Mane.    |
| 13) | Pawar Swapnali Laxman      | Subbar   |
| 14) | Shinde Pranita Ashok       | Shinde.  |
| 15) | Jadhav Amruta Pralhad      | Jadhav.  |
| 16) | Lohar Anita Ramchandra.    | Allohar  |
| 17) | Chavan Prajakta Mahadev    | Chavan.  |
| 18) | Chavan Amruta Dilip        | Archavan |
| 19) | Chavan Komal Maruti        | Chavan   |
| 20) | Mane Dhanashri Pandurang   | Mane.    |
| 21) | Mali Rupali Prakash.       | Malik    |
| 22) | Mali Shobha Chandrakant    | Malik.   |
| 23) | Patil Tejasree Vishnu      | Patil    |
| 24) | Patil Ashwini Jalindar     | Patil    |
| 25) | Mule Sonali Sanjay         | Mule     |
| 26) | Mane Megha Prakash         | Mane.    |
| 27) | Shendage peatiksha Harayan | MS       |
| 28) | Tamkhade Archana Hanmant   | A.H.T.   |
| 29) | Patil Georzi Pratap        | Patil.   |
| 30) | Patil vidyayani Rajaram.   | Patil.   |
| 31) | Patil Supriya Popat        | Patil    |
| 32) | Patil Hemlata Bhaskar.     | Patil.   |
| 33) | mali Asmita Shrikant       | Smali.   |
| 34) | Budhakar. sonali sarvanta  | Sub.     |



31/08/016.

- 68) Balugade Ragini Arun R.A. Balugade
- 34) Mali Poonam Suresh Mali
- 35) Dhabugade Sayali Prakash Dhabugade
- 36) Mali Pooja Ramchandra. Mali
- 37) Edoke Monali Maruti Edoke
- 38) Chavan Shital Shambaji Chavan
- 39) Jamdade Prajakta Arvind Jamdade
- 40) Shasale Vidharani Shambaji Shasale
- 41) Jamdade Pooja Dilip Jamdade
- 42) Koli Rupali Subhash Koli
- 43) Suryawanshi Seema D. SRS
44. Mose Sonali Umaji Mose
45. Jadhav Swapnali Mahadev Jadhav
46. Shinde Mayavati Sambhaji Shinde
47. Pawar Sayali Pralhad Pawar
48. Chougule Ashwini D. Chougule
49. Jamdade Sujata Subhash Jamdade
50. Patil Snehal Haibhar Patil
51. Patil Nikita Manik MPatil
- 52) Pawar Komal Prakash Pawar
- 53] Patil Ashvini Vitthal Patil
- 54] Patil Bhagyashri Ramesh BPatil
- 55) Patil Pradnya Anand PPatil
- 56) Shinde Ashwini Pratap. AS
- 57] Mokale Teerthi Appasaheb Mokale
- 58] Patil Pranati Pramod Patil
- 59] Pawar Sonali Anandrao Pawar
- 60] Patil Shweta Sanjay Patil
- 61] Patil Varsharani Suresh VPatil
- 62) Patil Akshata Adhikrao APatil
- 63) Patil Smita Sanjay Patil
- 64) Patil Aishwarya Vitthal. Patil
- 65) Shinde Madhuri A. Shinde
- 66) Mulik Swapnali Mukund Mulik
- 67) Patil Ashwami Ananda Patil



## Boys

| Name                            | Sign.            |
|---------------------------------|------------------|
| 1) Karanje Ravindra Gangaram    | <u>Karaje</u>    |
| 2) Shivpuje Umesh Revansidha    | <u>Umesh.</u>    |
| 3) Mali Suraj Arun              | <u>Mali</u>      |
| 4) Mali Vishal Vasant           | <u>Vimali</u>    |
| 5) Koli Sagar Shivaji           | <del>Patil</del> |
| 6) Mane Dipak Mahadev           | <u>Mane</u>      |
| 7) Nfkam. Akshay Ramesh         | <u>Doikam</u>    |
| 8) Nalawade Swapnil Sopan       | <u>Abalawade</u> |
| 9) PATIL INDRAJIT TANAJI        | <u>Patil</u>     |
| 10) Mirajkar Jitendra Suresh    | <u>Mirajkar</u>  |
| 11) Patil Pradip Pandurang      | <u>Patil</u>     |
| 12) Patil Prakash Dinkar        | <u>Patil</u>     |
| 13) Patil Rushikesh Ravindra    | <u>Patil</u>     |
| 14) Patil Pradip Sanjay         | <u>Patil</u>     |
| 15) KHANDARE MAHADEV PRAKASH    | <u>Km</u>        |
| 16) Jadhav Sagar Dadas          | <u>Jadhav</u>    |
| 17) Patil Prashant Balasa       | <u>Patil</u>     |
| 18) Zambre Rohit Sanjay         | <u>Zambre</u>    |
| 19) Patil Jaydeep Keishnadar    | <u>Patil</u>     |
| 20) BHAGYAVANT NARASINH DAMODAR | <u>Bhagji</u>    |
| 21) Mali Shivambhu Chingitakant | <u>Semali</u>    |
| 22) Ghore Nilesh Sanjay         | <u>N. Ghore</u>  |
| 23) Chavan Kuldip Sambhaji      | <u>Chavan</u>    |
| 24) Gutar Sachin Subhash.       | <u>Gutar</u>     |
| 25) Rushikesh P. Mane.          | <u>Ramane</u>    |
| 26) Potdar Vinod Pandurang      | <u>Potdar</u>    |
| 27) Jadhav Akshay Ajit          | <u>Jadhav</u>    |
| 28) Suraj Aslak Hasbe           | <u>Suraj</u>     |
| 29) Harele Ramchandra Palhad.   | <u>Harele</u>    |
| 30) Mali Vijay Dashrath         | <u>Mali</u>      |
| 31) Patil Sagar Ramesh          | <u>Patil</u>     |
| 32) Mali Vijay Shivaji          | <u>Mali</u>      |



33] Petkar. Shridhar Sureshwar.

34] Ghodake vijay Balaso

35] Dubaut Avinush A.

36] Charan Nitin.v.

37] Salunkhe Nikhil Mohan

~~Sat~~  
Joy  
Anand's  
Dhavan  
~~Salunkhe~~



| Name                           | Sign      |
|--------------------------------|-----------|
| 1) Patil Sarita Raghunath      | SPPatil.  |
| 2) Patil Supriya Vishwanath    | SPatil    |
| 3) Chavan Prajakta Mahadev     | Chavan.   |
| 4) Chavan Amruta Dilip         | Chavan.   |
| 5) Pawar Sonali Anandree       | Pawar     |
| 6) Patil Pranoti Pramod        | Patil     |
| 7) Kharade Poonam Gulabam      | Kharade   |
| 8) Kazi Afroj Dastagir.        | KAZI      |
| 9) Mane Dhanashree Pandurang   | Mane.     |
| 10) Lohar Anita Ramchandra.    | Lohar.    |
| 11) More Sonali Umaji          | More.     |
| 12) Patil Bhagyashri Ramesh    | Patil.    |
| 13) Suryawanshi Seema Dnyanded | SS.       |
| 14) Chavan Komal maruti        | Chavan.   |
| 15) Patil Komal Sahadev        | Patil.    |
| 16) Mali sonali sudhakar       | Mali.     |
| 17) Jadhav Swapnali Jagannath  | Jadhav    |
| 18) Dhabugade Sayali Prakash   | Dhabugade |
| 19) Patil Aishwarya Ravasheeb  | Patil.    |
| 20) Mali shobha Chandrakant    | Mali.     |
| 21) Koli Rupali Subhash        | Koli      |
| 22) Mane Pooja Ashok.          | Mane.     |
| 23) Patil Hemlata Bhaskar.     | Patil.    |
| 24) Pawar Swapnali Laxman      | Pawar.    |
| 25) Patil Varsharani Suresh    | Patil.    |
| 26) Patil Shweta Sanjay.       | Patil.    |
| 27) Shinde Pranita Ashok       | Shinde.   |
| 28) Paurvima mahipati mali.    | Paurv     |
| 29) Mali Swapnali Narayan      | Mali.     |
| 30) Kharate Shital Shashikant  | SK        |
| 31) Mali Rupali Prakash        | Mali.     |
| 32) Mali Poonam Suresh         | Mali.     |
| 33) Mali Pooja Ramchandra.     | Mali.     |

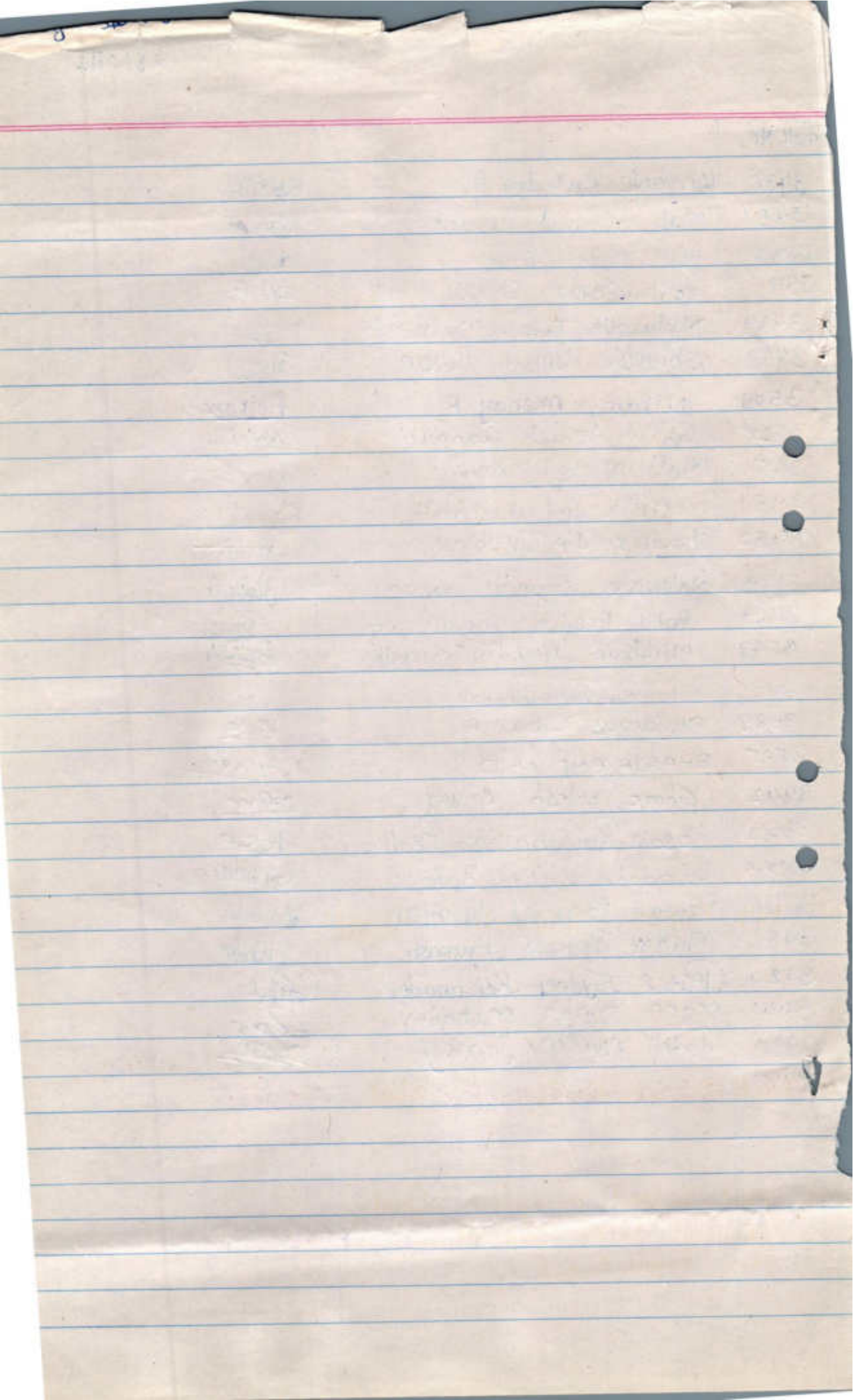


- 34) Patil vidyarani Rajaram Patil.
- 35) Patil Supriya Popat Patil
- 36) shendage pratiksha Naayan Patil
- 37) Tamkhade Archana Hanmant Patil
- 38) Patil Gouri Pratap Patil.
- 39) Patil Ashwini Jalindar Patil
- 40) Patil Tejasree Vishnu Patil
- 41) Disale Tanuja. Chandrakant Disale
- 42) Jadhav Swapnali Mahadev Jadhav.
- 43) Kadlam Namrata Uttam Kadlam
- 44) Jadhav Ananta Pralhad Jadhav.
- 45) Jamadade Rutuja Dilip Jamadade.
- 46) Bhasale vidyarani shahaji Bhasale
- 47) Edake Monali Maruti Edake
- 48) Gijare Komal Shankar Gijare
- 49) Pawar Sayali Pralhad. Pawar.
- 50) Shinde Mayavati Sambhaji Shinde
- 51) Shinde Madhuri Ananda Shinde
- 52) Mulik Swapnali Mukund Mulik
- 53) Patil Ashwini Vitthal Patil
- 54) Chougale Ashwini Dhondiram Chougale
- 55) Disale Shivani Chandrashekhar Disale.
- 56) Lokhande Ashwini Chandrashekhar Lokhande
- 57) Patil Savitri Shahaji Patil
- 58) Patil Komal Tanaji Patil
- 59) Patil Namrata Sunil Patil
- 60) Patil Smita Sanjay Patil.
- 61) Patil Aishwarya Vitthal. Patil.
- 62) Patil Akshata Adhikrao Patil.
- 63) Mane Megha Prakash Mane.
- 64) Male Sonali Sanjay Male
- 65) Patil Namrata Ganaji Patil.
- 66) Mokale Tepti Appasaheb Mokale



| Roll No. |                            |                     |
|----------|----------------------------|---------------------|
| 3436     | Kamvanje Ravindra G.       | Karigje             |
| 3437     | Mali Vishal Vasant         | Omali               |
| 3506     | Mali Suraj Arun            | Shel                |
| 3511     | Koli Sagar Shivaji         | <del>Skoti</del>    |
| 3469     | Nalwade Tejas Mahipati     | Tm. Nalwade         |
| 3468     | Shiupuje Umesh Revan       | Umesh               |
| 3509     | Nikam Akshay R.            | Avitkam             |
| 3518     | Gholap Ashish Ganpati      | Gholap              |
| 3450     | Mali Vijay Shivaji         | Vijayali            |
| 3451     | Mali Vijay Dashrath        | Omali               |
| 3480     | Chavan Kuldip Sambhaji     | <del>KH/14</del>    |
| 3524     | Nalwade Swapnil Sopan      | Nalwade             |
| 3463     | Patil Pradip Pandurang     | Patil               |
| 3547     | Mirajkar Jitendra Suresh   | <del>Mirajkar</del> |
| 3510     | Sutar Suyash Sudhakar      | Sutar               |
| 3589     | Mujawar Iqbal B.           | Imte                |
| 3505     | BHAGYAVANT N. D.           | Jinraj              |
| 3442     | Ghore Nilesh Sanjay        | Nalwade             |
| 3559     | Hazale Ramchandra Pealhad. | Hazale              |
| 3544     | Ghodake Vijay Balaso       | Ghodake             |
| 3536     | Pawar Prasad Narayan       | Pawar               |
| 3486     | Mhetre Pranav Prakash      | Mhetre              |
| 3424     | Patil Jaydeep Kaismadev    | Patil               |
| 3441     | Mane Dipak Mahadev         | Mane                |
| 3534     | Patil Pradip Sanjay        | <del>Patil</del>    |
| 3461     | Shirtee Rohit Sanjay       | <del>Rohit</del>    |







71) Jamadade Rutuja Pratap  
 Bhosale Jidyani shahaji  
 70) Kadam Namrata Uttam  
 33) Patil Nameeta Sunil.  
 34) Pawar Sayali Pralhad  
 84) Patil Tejaswree Vishnu  
 35) Patil Ashwini Jalindar.  
 36) Chougale Ashwini D.  
 37) Patil Ashvini Nitthal  
 38) Tamkhade Archana H.  
 39) Shendage Pratiksha N.  
 40) Patil vidyayani R.  
 41) Patil Supriya Popat.  
 42) Disale Tanuja Chandrakant.  
 43) Jadhav Swapnali Mahadev  
 45) Disale Shivani Chandrashekhore  
 46) Sokhonde Ashwini Chandrakant  
 47) Jadhav Amruta Pralhad  
 48) Patil Namrata Manaji.  
 49) Shinde Ashwini Pratap.  
 50) Patil Ashwami Ananda  
 51) Budhavare Sonali Savanta  
 52) Chavan Shital Stotaji  
 53) Edoke Monali Marati  
 54) Jadhav Riturani Raghunatti  
 55) Mane Megha Prakash  
 56) Patil Pranoti Pramod  
 57) Pawar Sarali A.  
 58) Motale Tepti. Appasaheb  
 59) Male Sonali Sanjay  
 60) Jamadade Sujata Subhash  
 61) Mali Rupali Prakash.  
 62) Mali Swapnali Nayan  
 63) Mali Purnima Mahipti  
 64) Kharade Poonam Gulabarao.  
 65) Patil Hemlata Bhaskar  
 66) Patil Bhagyashri Ramesh  
 67) Balugade Ragini Arun  
 68) Jamdade Prajakta Arvind  
 69) Patil Snehal Haribhau

Jamadade Jamadade Jamadade Jamadade  
 Bhosale Bhosale Bhosale Bhosale  
 Kadam Kadam  
 Nameeta Nameeta  
 Pawar Pawar  
 Patil Patil  
 5-10-016 6-10-016 8-10-2016/13-10-2016  
 Patil Patil Patil Patil  
 Ashpatil Ashpatil Ashpatil Ashpatil  
 Chougale Chougale Chougale Chougale  
 Patil Patil Patil Patil  
 A.H.T. A.H.T. A.H.T. A.H.T.  
 P.N.S. P.N.S. P.N.S. P.N.S.  
 R.Patil R.Patil R.Patil R.Patil  
 Patil Patil Patil Patil  
 Disale Disale Disale Disale  
 Shelhar Shelhar Shelhar Shelhar  
 Disale Disale Disale Disale  
 Sokhonde Sokhonde Sokhonde Sokhonde  
 Jadhav Jadhav Jadhav Jadhav  
 Patil Patil Patil Patil  
 A.P.S. A.P.S.  
 G.Patil G.Patil G.Patil G.Patil  
 Sub Sub Sub Sub  
 Bovan Bovan Bovan Bovan  
 Amedake Amedake Amedake Amedake  
 P.P.Tadur P.P.Tadur P.P.Tadur P.P.Tadur  
 P.Mane P.Mane P.Mane P.Mane  
 Patil Patil Patil Patil  
 Pawar Pawar Pawar Pawar  
 Motale Motale Motale Motale  
 Male Male Male Male  
 Jamadade Jamadade Jamadade Jamadade  
 Mali Mali Mali Mali  
 Mali Mali Mali Mali  
 Mali Mali Mali Mali  
 Kharade Kharade Kharade Kharade  
 Patil Patil Patil Patil  
 Patil Patil Patil Patil  
 R.A. Balugade R.A. Balugade  
 Patil Patil Patil Patil



Fawar Komal Prakash  
Patil Nikita Manik

Pravara  
Patil

Name of students

5/10/16

6-10-2016

8-10-016

13-10-2016

|                               |                  |                  |                 |                |
|-------------------------------|------------------|------------------|-----------------|----------------|
| 1) Patil Saalita R.           | <u>SPPatil</u>   | <u>SPPatil</u>   | <u>SPPatil</u>  | <u>SPPatil</u> |
| 2) Patil Supriya V            | <u>SPPatil</u>   | <u>SPPatil</u>   | <u>SPPatil</u>  | <u>SPPatil</u> |
| 3) Mane Dhanashri P           | <u>Pravara</u>   | <u>Pravara</u>   | <u>Pravara</u>  |                |
| 4) Lohar Anita R.             | <u>Allohar</u>   | <u>Allohar</u>   | <u>Allohar</u>  |                |
| 5) Chavan Prajakta Mahadev    | <u>Amhavan</u>   | <u>Amhavan</u>   | <u>Amhavan</u>  |                |
| 6) Chavan Komal Manu          | <u>Kmhavan</u>   | <u>Kmhavan</u>   | <u>Kmhavan</u>  |                |
| 7) Chavan Amruta Dilip        | <u>Archavan</u>  | <u>Archavan</u>  | <u>Archavan</u> |                |
| 8) Kori Aftab Dastagir        | <u>Korai</u>     | <u>Korai</u>     | <u>Korai</u>    | <u>Korai</u>   |
| 9) Suryawanshi Seema D.       | <u>SPS</u>       | <u>SPS</u>       | <u>SPS</u>      |                |
| 10) Pawar Swapnali Laxman     | <u>SPawar</u>    | <u>SPawar</u>    | <u>SPawar</u>   | <u>SPawar</u>  |
| 11) Mane Pooja Ashok          | <u>Pravara</u>   | <u>Pravara</u>   | <u>Pravara</u>  |                |
| 12) More Jonali Umaji         | <u>Jmore</u>     | <u>Jmore</u>     | <u>Jmore</u>    | <u>Jmore</u>   |
| 13) Koli Rupali Subhash       | <u>Rkoli</u>     | <u>Rkoli</u>     | <u>Rkoli</u>    | <u>Rkoli</u>   |
| 14) Patil Shweta Sanjay       | <u>Patil</u>     | <u>Patil</u>     | <u>Patil</u>    |                |
| 15) Mali Poonam Suresh        | <u>Mali</u>      | <u>Mali</u>      | <u>Mali</u>     |                |
| 16) Gijare Komal Shankar      | <u>Kgijare</u>   | <u>Kgijare</u>   |                 |                |
| 17) Shinde Mayavati S.        | <u>Shinde</u>    | <u>Shinde</u>    | <u>Shinde</u>   |                |
| 18) Khormate Shital S.        | <u>SK</u>        | <u>SK</u>        |                 |                |
| 19) Mali Shobha Chandrakant   | <u>Mali</u>      | <u>Mali</u>      | <u>Mali</u>     | <u>Mali</u>    |
| 20) Patil Aishwarya Ravasahab | <u>APatil</u>    | <u>APatil</u>    | <u>APatil</u>   |                |
| 21) Gosavi Deepali M.         | <u>DG</u>        | <u>DG</u>        | <u>DG</u>       | <u>DG</u>      |
| 22) Jadhav Swapnali Jagannath | <u>Jadhav</u>    | <u>Jadhav</u>    | <u>Jadhav</u>   | <u>Jadhav</u>  |
| 23) Mali Pooja Ramchandra     | <u>Mali</u>      | <u>Mali</u>      | <u>Mali</u>     |                |
| 24) Dhavugade Sayali Prakash  | <u>Dhavugade</u> | <u>Dhavugade</u> |                 |                |
| 25) Shinde Pranita Ashok      | <u>PShinde</u>   | <u>PShinde</u>   | <u>PShinde</u>  |                |
| 26) Patil Varsharani Suresh   | <u>VPatil</u>    | <u>VPatil</u>    | <u>VPatil</u>   |                |
| 27) Patil Akshata Adhikrao    | <u>APatil</u>    | <u>APatil</u>    | <u>APatil</u>   | <u>APatil</u>  |
| 28) Patil Aishwarya Vitthal   | <u>APatil</u>    | <u>APatil</u>    | <u>APatil</u>   | <u>APatil</u>  |
| 29) Mali M.                   | <u>Mali</u>      | <u>Mali</u>      | <u>Mali</u>     | <u>Mali</u>    |
| 30) A.                        | <u>Mhinde</u>    | <u>Mhinde</u>    | <u>Mhinde</u>   | <u>Mhinde</u>  |
| 31) B.                        | <u>Mali</u>      | <u>Mali</u>      | <u>Mali</u>     |                |
| 32) C.                        | <u>Kpatil</u>    | <u>Kpatil</u>    | <u>Kpatil</u>   | <u>Kpatil</u>  |
| 33) D.                        | <u>Patil</u>     | <u>Patil</u>     | <u>Patil</u>    |                |
| 34) E.                        | <u>Patil</u>     | <u>Patil</u>     | <u>Patil</u>    |                |
| 35) F.                        | <u>Patil</u>     | <u>Patil</u>     | <u>Patil</u>    |                |
| 36) G.                        | <u>Patil</u>     | <u>Patil</u>     | <u>Patil</u>    |                |
| 37) H.                        | <u>Patil</u>     | <u>Patil</u>     | <u>Patil</u>    |                |
| 38) I.                        | <u>Patil</u>     | <u>Patil</u>     | <u>Patil</u>    |                |
| 39) J.                        | <u>Patil</u>     | <u>Patil</u>     | <u>Patil</u>    |                |
| 40) K.                        | <u>Patil</u>     | <u>Patil</u>     | <u>Patil</u>    |                |
| 41) L.                        | <u>Patil</u>     | <u>Patil</u>     | <u>Patil</u>    |                |
| 42) M.                        | <u>Patil</u>     | <u>Patil</u>     | <u>Patil</u>    |                |
| 43) N.                        | <u>Patil</u>     | <u>Patil</u>     | <u>Patil</u>    |                |
| 44) O.                        | <u>Patil</u>     | <u>Patil</u>     | <u>Patil</u>    |                |
| 45) P.                        | <u>Patil</u>     | <u>Patil</u>     | <u>Patil</u>    |                |
| 46) Q.                        | <u>Patil</u>     | <u>Patil</u>     | <u>Patil</u>    |                |
| 47) R.                        | <u>Patil</u>     | <u>Patil</u>     | <u>Patil</u>    |                |
| 48) S.                        | <u>Patil</u>     | <u>Patil</u>     | <u>Patil</u>    |                |
| 49) T.                        | <u>Patil</u>     | <u>Patil</u>     | <u>Patil</u>    |                |
| 50) U.                        | <u>Patil</u>     | <u>Patil</u>     | <u>Patil</u>    |                |
| 51) V.                        | <u>Patil</u>     | <u>Patil</u>     | <u>Patil</u>    |                |
| 52) W.                        | <u>Patil</u>     | <u>Patil</u>     | <u>Patil</u>    |                |
| 53) X.                        | <u>Patil</u>     | <u>Patil</u>     | <u>Patil</u>    |                |
| 54) Y.                        | <u>Patil</u>     | <u>Patil</u>     | <u>Patil</u>    |                |
| 55) Z.                        | <u>Patil</u>     | <u>Patil</u>     | <u>Patil</u>    |                |



॥ ज्ञान, विज्ञान आणि सुसंस्कार यासाठी शिक्षण प्रसार ॥ - शिक्षणमहर्षि प.पू. डॉ. बापूजी साळुंखे

Shri Swami Vivekanand Shikshan Sanstha's

Padmabhushan Dr. Vasantraodada Patil Mahavidyalaya, Tasgaon.

Test / Terminal / Preliminary / Annual Examination

Name \_\_\_\_\_

Class \_\_\_\_\_ Roll No. \_\_\_\_\_

Subject \_\_\_\_\_ Marks Obtained \_\_\_\_\_

Paper No. \_\_\_\_\_ Date 18/10/2016

Sign. of the Student

Sign. of the Supervisor

Sign. of the Examiner

(येथूनच लिहिण्यास सुरुवात करावी.)

| Roll No. | Name                        | Sign.       |
|----------|-----------------------------|-------------|
| 2561     | Awale Sunil Paesharam       | Awale       |
| 2769     | Dabole Pradip Ashok         | Dabole      |
| 2905     | Jadhav Suhay Shivaji        | Jadhav      |
| 2920     | Power umesh himmatrao       | UP          |
| 2914     | Kadam Karam Subhash         | Kadam       |
| 2778     | Jadhav utkarsh Narayan      | Jadhav      |
| 2885     | Patil Dipak Bajee Rao       | Patil       |
| 2560     | Chavan Ankas Sunit          | Ankashree   |
| 2854     | Sutar Abhejeb Prakash       | Sutar       |
| 2767     | Dhebe Ganesh Tukaram        | Dhebe       |
| 2566     | Chavan Vikas Bapurao        | Vikas       |
| 2862     | Jadav Naibhav Geshanath     | Jadav       |
| 2925     | Dane Ashish Kumar Balasaheb | Ashishkumar |
| 2928     | Tangar Pankaj madhukar      | Tangar      |
| 2761     | Gore Kamlesh Popsab         | Gore        |
| 2934     | Bhat Aniket Rajendra        | Bhat        |
| 2927     | shinde Anup Ashok           | AShinde     |
| 2567     | Dabe Amit Bhagwat           | Dabe        |
| 2989     | Patil onkar suresh          | Patil       |
| 2902     | Jadhav Sushant Sanjay       | Jadhav      |
| 2881     | Nirgude Sheenivos Shivaji   | Nirgude     |
| 2868     | Chavan Sushant Subhash      | SChavan     |
| 2872     | Jamdade Shubham chandrakant | Jamdade     |
| 2864     | Attav Arbij shahanvaj       | Attav       |



2907 Jadhav Rahul Ravasaheb

Rahul



॥ श्री राम ॥

॥ ज्ञान, विज्ञान आणि सुसंस्कार चांमार्ठी शिक्षणप्रसार ॥ - शिक्षणमहर्षी डॉ. बापूजी साबुंखे

Shri Swami Vivekanand Shikshan Sanstha's

**Padmabhushan Dr. Vasantraodada Patil Mahavidyalaya, Tasgaon**

**SUPPLEMENT**

Class B.Sc. III Roll No. ....

Subject physical chemistry Paper No. ....

Sign. of the Supervisor

Name

19/10/2015

- 1) Sutar Suyash Sudhakar Sutar S.S.
- 2) Gharre Nilesh Sanjay AGharre.
- 3) Patil Pradip Pandurang Pratti
- 4) Nalawade Suxpril sapon Slakawade
- 5) Karvanje Ravindra Gangaram Karvanje
- 6) Mirajkar Ritendra Suresh Mirajkar
- 7) BHAGYAVANT N. D. Bhagvanth
- 8) Shivpuje Umesh Revan Umesh.
- 9) Mali Suraj Arun Mali
- 10) Shendage Bhausa Tukaram Shendage
- 11) Salunkhe Nikhil Mohan Salunkhe
- 12) Swami Vighneshwar Umupoksh Swami
- 13) Ghodake Vijay Balaso Ghodake.



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Date- 19-10-2016  
Sig

Name

- Patil Smita R. SEPatil.  
 Patil Supriya V Patil  
 Kazi Afroz D. KAZIAD  
 Kharade Ponnam G. Pkharade  
 Chavan Amruta D. Atchavan  
 mane Dhanashri. Amame  
 Chavan Komal M Kmchavan  
 Chavan Prayakta M. Pmchavan.  
 Zohar Anita R. Alchavan.  
 Pournima Mahipati Mali Pm.  
 Swapnali Norayan Mali Smali.  
 Gosavi Deepali Manik DmG  
 Jadhav Swapnali Jagannath Jadhav  
 Jadhav swapnali Mahadev Jadhav  
 Mali Rupali Prakash. Pomali.  
 Patil supriya Papat Patil  
 Patil vidyarani R. VPatil.  
 shinde Madhuj Ananda Pshinde  
 Patil Aishwarya vitthal. APatil.  
 Patil smita sanjay Patil  
 Patil Akshata Adhikarao APatil  
 Patil Aishwarya Ravasahab APatil  
 Mali Poonam Suresh Smali --  
 Patil Hemleela Bhasker. Patil  
 Patil Shweta Sanjay Patil.  
 Patil varsharasi Suresh. VPatil  
 Edake Monali Maruti Medake  
 Shasale Vidyanani Shahaji Shasale.  
 Jamadade sujata subhash SJJamadele.  
 Patil Ashwini vitthal Patil  
 Jamadade Rutuja Dilip Jamadade.  
 Mule Sonali Sanjay Smule



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Mane Megha Prakash  
 Disale Tanuja Chandrakant  
 Lokhande Ashwini Chandrakant  
 Kadam Namrata Uttam  
 Disale Shivani Chandrasakar

Prmane:  
 Disale:  
 Achonde  
 Kadam  
 Sisde.

"Dissemination of Education for Knowledge, Science and Culture"  
Shikshanmaharashi Dr. Bapuji Salunkhe

Shri Swami Vivekanand Shikshan Sanstha Kolhapur  
Padmabhushan Dr. Vasantodada Patil Mahavidyalaya, Tasgaon  
**PG Department of Chemistry**

**Certificate Course in Laboratory Management and  
Analytical Techniques  
2016-17**


Date : 10/12/2016

**Notice**

**Certificate Course Examination**

All students are hereby informed that the examination **Certificate Course in Laboratory Management and Analytical Techniques** will be held as per following schedule given below. Students should remain present on right time.

| <b>Date</b> | <b>Time</b>         | <b>Paper No.</b> |
|-------------|---------------------|------------------|
| 19 Dec 2016 | 11.00 am to 1.00 pm | I                |
| 20 Dec 2016 | 11.00 am to 1.00 pm | II               |
| 21 Dec 2016 | 11.00 am to 5.00 pm | Practical        |

  
Dr. S. S. Patil  
Head of ~~Head~~ Department  
**Dept. of Chemistry**  
P.D.V.P. College, Tasgaon



PG Department of Chemistry

Certificate Course in Laboratory Management and

Analytical Techniques

2016-17

COC (Theory) Examination

Paper I : Laboratory Management

Day & Time : 19<sup>th</sup> Dec 2016

Total Marks : 50

Time : 11.00 a.m. to 1.00 p.m.

---

1. Select the most correct alternative among those given below: 10
- Addition of 9ml of distilled water in 1ml stock solution results in ----- dilution of stock solution.  
a) 1:9    b) 1:10    c) 1:100    d) 9:1
  - What is the conversion factor for symbol 'G' (giga) ?  
a)  $10^{12}$     b)  $10^9$     c)  $10^{-12}$     d)  $10^{-2}$
  - Which of the following is not equivalent to 1 ppb?  
a)  $1\mu\text{g}/10^3\text{gm}$     b)  $1\mu\text{g}/10^6\text{mg}$     c)  $1\mu\text{g}/10^9\mu\text{g}$     d) all of these
  - 12 grams of KOH are dissolved in 3 liters of solution. What will be the concentration of resulting KOH solution?  
a) 4 %    b) 0.4 %    c) 0.04 %    d) 40 %
  - Sodium metal in laboratory should be kept in -----  
a) water    b) alcohol    c) kerosene    d) acids
2. A) Define and explain units of concentration (i) ppm and (ii) normality using suitable examples. 10
- OR
- B) Mention general instructions for safe working in the laboratory. 10

3. Attempt **any one** of the following : 10
- If NaOH and  $\text{KMnO}_4$  solutions of unknown strength are supplied to you. Explain how will you find out the exact strength of these solutions. (solid oxalic acid is supplied to you.)
  - What is sampling? Explain different methods of sampling.
4. Solve **any one** of the following : 10
- 45 grams of NaCl are dissolved in water and diluted by using enough water to give one liter of NaCl solution. Calculate molarity & % composition of this solution. (1 mole of NaCl = 58.5 gms)
  - In a glucose solution, 25 gms of glucose are present in 900 ml of solution. Calculate concentration of this solution in units of % composition and gms/ lit.
5. Write notes on **any two** of the following : 10
- Methods of glassware cleaning in laboratory.
  - Calibration of burette
  - Serial dilution technique
  - Preparation of phenolphthalein and starch indicator



PG Department of Chemistry  
Certificate Course in Laboratory Management and  
Analytical Techniques  
2016-17

**Mark Sheet**

| Sr. No. | Seat No. | Name of the student           | Paper I | Paper II | Practical | Total |
|---------|----------|-------------------------------|---------|----------|-----------|-------|
| 1       | 1001     | MANE RUSHIKESH PRADIP         | 46      | 43       | 45        | 134   |
| 2       | 1002     | KHANDARE MAHADEV PRAKASH      | 46      | 42       | 44        | 132   |
| 3       | 1003     | PATIL AKSHAY VIJAY            | 42      | 47       | 48        | 137   |
| 4       | 1004     | PATIL PRADNYA ANAND           | 45      | 42       | 43        | 130   |
| 5       | 1005     | SUTAR SACHIN SUBHASH          | 45      | 46       | 45        | 136   |
| 6       | 1006     | PATIL HEMLATA BHASKAR         | 41      | 40       | 45        | 126   |
| 7       | 1007     | PATIL JAYDEEP KRISHNADEV      | 43      | 41       | 43        | 127   |
| 8       | 1008     | MOHITE PAVAN ANIL             | 43      | 43       | 46        | 132   |
| 9       | 1009     | PATIL SUPRIYA POPAT           | 42      | 43       | 45        | 130   |
| 10      | 1010     | SHINDE ASHWINI PRATAP         | 44      | 45       | 47        | 136   |
| 11      | 1011     | BHOSALE VIDHYARANI SHAHAI     | 43      | 43       | 45        | 131   |
| 12      | 1012     | PATIL INDRAJEET TANAJI        | 44      | 47       | 48        | 139   |
| 13      | 1013     | YADAV SAGAR DURVAS            | 45      | 42       | 43        | 130   |
| 14      | 1014     | DISALE SHIVANI CHANDRASHEKHAR | 45      | 42       | 45        | 132   |
| 15      | 1015     | KARVANJE RAVINDRA GANGARAM    | 42      | 42       | 45        | 129   |
| 16      | 1016     | MOKALE TRUPTI APPASAHEB       | 45      | 44       | 46        | 135   |
| 17      | 1017     | JAMADADE AKSHAYKUMAR VILAS    | 42      | 46       | 47        | 135   |
| 18      | 1018     | ADSUL SANDEEP SAMBHAJI        | 44      | 44       | 45        | 133   |
| 19      | 1019     | GHARE NILESH SANJAY           | 41      | 42       | 44        | 127   |
| 20      | 1020     | MALI SWAPNALI NARAYAN         | 45      | 47       | 48        | 140   |
| 21      | 1021     | KHARADE POONAM GULABRAO       | 46      | 42       | 43        | 131   |
| 22      | 1022     | PATIL AKSHATA ADHIKRAO        | 43      | 45       | 44        | 132   |
| 23      | 1023     | PATIL AISHWARYA VITTHAL       | 41      | 40       | 45        | 126   |
| 24      | 1024     | SALUNKHE SANGHARSH NETAJI     | 42      | 41       | 43        | 126   |
| 25      | 1025     | MALI VIJAY SHIVAJI            | 42      | 44       | 47        | 133   |
| 26      | 1026     | MALI VIJAY DASHRATH           | 42      | 43       | 45        | 130   |
| 27      | 1027     | CHOUGULE ASHWINI DHONDIRAM    | 44      | 45       | 47        | 136   |
| 28      | 1028     | MULIK SWAPNALI MUKUND         | 42      | 42       | 44        | 128   |
| 29      | 1029     | PATIL KOMAL SAHADEV           | 44      | 47       | 48        | 139   |
| 30      | 1030     | JADHAV SWAPNALI MAHADEV       | 45      | 42       | 43        | 130   |



|    |      |                                 |    |    |    |     |
|----|------|---------------------------------|----|----|----|-----|
| 31 | 1031 | JAMADADE RUTUJA DILIP           | 43 | 45 | 44 | 132 |
| 32 | 1032 | BUDHAWALE SONALI SAVANTA        | 41 | 42 | 45 | 128 |
| 33 | 1033 | MORE VAIBHAV BALKRISHANA        | 43 | 41 | 43 | 127 |
| 34 | 1034 | SHINTRE ROHIT SANJAY            | 45 | 44 | 46 | 135 |
| 35 | 1035 | PATIL GOURI PRATAP              | 42 | 46 | 47 | 135 |
| 36 | 1036 | PATIL PRADIP PANDURANG          | 44 | 44 | 45 | 133 |
| 37 | 1037 | SHENDAGE PRATIKSHA NARAYAN      | 45 | 42 | 44 | 131 |
| 38 | 1038 | TAMKHADE ARCHANA HANMANT        | 42 | 47 | 48 | 137 |
| 39 | 1039 | JADHAV RUTURANI RAGHUNATH       | 45 | 42 | 43 | 130 |
| 40 | 1040 | SHIVPUJE UMESH REVAN            | 43 | 45 | 44 | 132 |
| 41 | 1041 | NALAWADE TEJAS MAHIPATI         | 45 | 46 | 45 | 136 |
| 42 | 1042 | GIJARE KOMAL SHANKAR            | 42 | 40 | 45 | 127 |
| 43 | 1043 | PATIL NIKITA MANIK              | 42 | 41 | 43 | 126 |
| 44 | 1044 | PATIL ONKAR DILIP               | 43 | 43 | 46 | 132 |
| 45 | 1045 | SALUNKHE NIKHIL MOHAN           | 42 | 44 | 47 | 133 |
| 46 | 1046 | MALI ASMITA SHRIKANT            | 42 | 43 | 45 | 130 |
| 47 | 1047 | PATIL KOMAL TANAJI              | 44 | 45 | 47 | 136 |
| 48 | 1048 | POTDAR VINOD PANDURANG          | 43 | 43 | 45 | 131 |
| 49 | 1049 | PATIL RUSHIKESH RAVINDRA        | 44 | 47 | 48 | 139 |
| 50 | 1050 | CHAVAN SANTOSH RAJARAM          | 45 | 42 | 43 | 130 |
| 51 | 1051 | CHAVAN KULDIP SAMBHAJI          | 43 | 45 | 44 | 132 |
| 52 | 1052 | DHABUGADE SAYALI PRAKASH        | 45 | 42 | 45 | 132 |
| 53 | 1053 | MALI POONAM SURESH              | 45 | 42 | 45 | 132 |
| 54 | 1054 | PATIL ASHWINI JALINDAR          | 45 | 44 | 46 | 135 |
| 55 | 1055 | PATIL TEJASHREE VISHNU          | 42 | 46 | 47 | 135 |
| 56 | 1056 | MHETRE PRANAV PRAKASH           | 44 | 44 | 45 | 133 |
| 57 | 1057 | SUTAR AKSHAY GAJANAN            | 44 | 43 | 47 | 134 |
| 58 | 1058 | GHEWARI VIVEK RAJKUMAR          | 42 | 42 | 44 | 128 |
| 59 | 1059 | CHAVAN PRAJAKTA MAHADEV         | 42 | 47 | 48 | 137 |
| 60 | 1060 | YADAV VIJAY RAJARAM             | 43 | 45 | 44 | 132 |
| 61 | 1061 | SHENDAGE BHAUSO TUKARAM         | 45 | 46 | 45 | 136 |
| 62 | 1062 | LOKHANDE ASHWINI<br>CHANDRAKANT | 43 | 40 | 45 | 128 |
| 63 | 1063 | SHINDE MADHURI ANANDA           | 42 | 41 | 43 | 126 |
| 64 | 1064 | PAWAR SWAPNALI LAXMAN           | 43 | 43 | 46 | 132 |
| 65 | 1065 | KOLI RUPALI SUBHASH             | 42 | 44 | 47 | 133 |
| 66 | 1066 | MORE SONALI UMAJI               | 42 | 43 | 45 | 130 |
| 67 | 1067 | LOHAR ANITA RAMCHANDRA          | 44 | 45 | 47 | 136 |
| 68 | 1068 | GOSAVI DEEPALI MANIK            | 42 | 42 | 44 | 128 |
| 69 | 1069 | MALI PAURNIMA MAHIPATI          | 44 | 47 | 48 | 139 |
| 70 | 1070 | MALI RUPALI PRAKASH             | 45 | 42 | 43 | 130 |
| 71 | 1071 | MORE PRANIL KHANDU              | 43 | 45 | 44 | 132 |
| 72 | 1072 | MALI SURAJ ARUN                 | 42 | 41 | 43 | 126 |
| 73 | 1073 | SADAKALE TUSHAR JAGANNATH       | 45 | 44 | 46 | 135 |
| 74 | 1074 | SADAKALE RUDRAKASH LAKSHMAN     | 42 | 46 | 47 | 135 |
| 75 | 1075 | NIKAM AKSHAY RAOSAHEB           | 44 | 44 | 45 | 133 |
| 76 | 1076 | SUTAR SUYASH SUDHAKAR           | 44 | 43 | 47 | 134 |
| 77 | 1077 | KOLI SAGAR SHIVAJI              | 42 | 42 | 44 | 128 |
| 78 | 1078 | PATIL SHEHAL HARIBHAU           | 45 | 42 | 43 | 130 |



|     |      |                            |    |    |    |     |
|-----|------|----------------------------|----|----|----|-----|
| 79  | 1079 | PATIL AISHWARYA RAVASAHEB  | 43 | 45 | 44 | 132 |
| 80  | 1080 | PETKAR SHRIDHAR SOMESHWAR  | 45 | 46 | 45 | 136 |
| 81  | 1081 | SURYAWANSHI SEEMA DNYANDEO | 42 | 40 | 45 | 127 |
| 82  | 1082 | GHOLAP ASHISH GANPATI      | 43 | 43 | 46 | 132 |
| 83  | 1083 | MANE MEGHA PRAKASH         | 42 | 44 | 47 | 133 |
| 84  | 1084 | CHAVAN SHITAL SHAHAJI      | 44 | 45 | 47 | 136 |
| 85  | 1085 | PAWAR SAYALI PRALHAD       | 43 | 43 | 45 | 131 |
| 86  | 1086 | PAWAR SONALI ANANDRAO      | 42 | 42 | 44 | 128 |
| 87  | 1087 | NALAWADE SWAPNIL SOPAN     | 44 | 47 | 48 | 139 |
| 88  | 1088 | PATIL SARITA RAGHUNATH     | 45 | 42 | 43 | 130 |
| 89  | 1089 | MANE POOJA ASHOK           | 43 | 45 | 44 | 132 |
| 90  | 1090 | PATIL VIDYARANI RAJARAM    | 45 | 42 | 45 | 132 |
| 91  | 1091 | KADAM NAMRATA UTTAM        | 44 | 42 | 45 | 131 |
| 92  | 1092 | PATIL SAGAR RAVASAHEB      | 42 | 41 | 43 | 126 |
| 93  | 1093 | CHAVAN NITEEN VITTHAL      | 45 | 44 | 46 | 135 |
| 94  | 1094 | PAWAR KOMAL PRAKASH        | 42 | 46 | 47 | 135 |
| 95  | 1095 | PATIL PRASHANT BALASO      | 44 | 44 | 45 | 133 |
| 96  | 1096 | SHINDE MAYAVATI SAMBHAJI   | 44 | 43 | 47 | 134 |
| 97  | 1097 | PATIL PRADIP SANJAY        | 41 | 42 | 44 | 127 |
| 98  | 1098 | ZAMBRE ROHIT SANJAY        | 42 | 47 | 48 | 137 |
| 99  | 1099 | PAWAR PRASAD NARAYAN       | 45 | 42 | 43 | 130 |
| 100 | 1100 | MALI SHIVAMBHU CHANDRAKANT | 43 | 45 | 44 | 132 |
| 101 | 1101 | PATIL PRANOTI PRAMOD       | 45 | 46 | 45 | 136 |
| 102 | 1102 | MUJAWAR IQBAL BABALAL      | 43 | 40 | 45 | 128 |
| 103 | 1103 | GHULE SUMIT RAJENDRA       | 42 | 41 | 43 | 126 |
| 104 | 1104 | HASABE SURAJ ASHOK         | 43 | 43 | 46 | 132 |
| 105 | 1105 | JADHAV AKSHAY ARJUN        | 42 | 44 | 47 | 133 |
| 106 | 1106 | JADHAV AMRUTA PRALHAD      | 42 | 43 | 45 | 130 |
| 107 | 1107 | GHODAKE VIJAY BALASO       | 44 | 45 | 47 | 136 |
| 108 | 1108 | PATIL SUPRIYA VISHWANATH   | 43 | 43 | 45 | 131 |
| 109 | 1109 | JADHAV ABHINAY DAGADU      | 42 | 42 | 44 | 128 |
| 110 | 1110 | MIRAJKAR JITENDRA SURESH   | 44 | 47 | 48 | 139 |
| 111 | 1111 | MANE PRAVIN PRAKASH        | 45 | 42 | 43 | 130 |
| 112 | 1112 | MOMIN ALIM NAUSHAD         | 43 | 45 | 44 | 132 |
| 113 | 1113 | PATIL SHWETA SANJAY        | 43 | 42 | 45 | 130 |
| 114 | 1114 | PATIL SMITA SANJAY         | 42 | 46 | 47 | 135 |
| 115 | 1115 | BALUGADE RAGINI ARUN       | 44 | 44 | 45 | 133 |
| 116 | 1116 | JADHAV SWAPNALI JAGANNATH  | 43 | 42 | 44 | 129 |
| 117 | 1117 | BHOSALE ABHIJEET SAMBHAJI  | 42 | 47 | 48 | 137 |
| 118 | 1118 | HARALE RAMCHANDRA PRALHAD  | 45 | 42 | 43 | 130 |
| 119 | 1119 | MALI POOJA RAMCHANDRA      | 45 | 46 | 45 | 136 |
| 120 | 1120 | JADHAV AKSHAY AJIT         | 45 | 40 | 45 | 130 |
| 121 | 1121 | MANE DHANASHRI PANDURANG   | 43 | 43 | 46 | 132 |
| 122 | 1122 | PATIL VARSHARANI SURESH    | 42 | 44 | 47 | 133 |

*Satish*

Head of the Department  
Head

Dept. of Chemistry  
P.D.V.P. College, Tasgaon



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Padmabhushan Dr. Vasandraodada Patil Mahavidyalaya,  
Tasgaon, Sangli, (MS), India-416312



## Department of Chemistry

### Certificate Course in Laboratory Management and Analytical Techniques

This is to certify that *Mr. Mane Rushikesh Pradip* has completed successfully 'Certificate Course in Laboratory Management and Analytical Techniques' conducted by Department of Chemistry, Padmabhushan Dr. Vasandraodada Patil Mahavidyalaya, Tasgaon in academic year 2016-17.

*Patil*

**Dr. Suresh S. Patil**  
Head of the Department

*Patil*  
**Dr. R. R. Kumbhar**  
Principal



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**Shri Swami Vivekanand Shikshan Sanstha Kolhapur's**  
**Padmabhushan Dr. Vasanttraodada Patil Mahavidyalaya,**  
Tasgaon, Sangli, (MS), India-416312



## **Department of Chemistry**

### **Certificate Course in Laboratory Management and Analytical Techniques**

*This is to certify that Ms. Patil Pradnya Anand has completed successfully 'Certificate Course in Laboratory Management and Analytical Techniques' conducted by Department of Chemistry, Padmabhushan Dr. Vasanttraodada Patil Mahavidyalaya, Tasgaon in academic year 2016-17.*

*Patil*

**Dr. Suresh S. Patil**  
Head of the Department

*Patil*  
**Dr. R. R. Kumbhar**  
Principal