



GuruVishwambharkrupaBahuuddeshiyaShikshanPrasarakMandalLakkidjawalga's

SHIVNERI MAHAVIDYALAYA

SHIRURANANTPAL, DIST. LATUR-413544

Syllabus

Certificate Course in Industrial Chemistry

Organized by

Department of Chemistry

Effective from June- 2022



SHIVNERI MAHAVIDYALAYA

SHIRUR ANANTPAL, DIST. LATUR

Choice Based Credit System (CBCS) Course Structure
CERTIFICATE COURSE IN INDUSTRIAL CHEMISTRY

Course Pattern & Scheme of Marking

With effect from: June -2022

| Semester | Course code | Name of the Paper | Instruction Hrs/Week | Total Period | C.A. | ESE | Total Marks | Credit |
|----------|-------------|----------------------|----------------------|--------------|------|-----|-------------|--------|
| V | CCIC | Industrial Chemistry | 03 | 30 | 10 | 40 | 50 | 02 |

Note:-

- CC=Certificate Course
- IC=Industrial Chemistry
- CA= Continuous assessment (Internal)
- ESE=End Semester Examination



DEPARTMENT OF CHEMISTRY

CERTIFICATE COURSE IN INDUSTRIAL CHEMISTRY

SYLLABUS

Marks – 50

Periods –30

Introduction

The certificate courses are shaped and oriented to make the current Indian Higher Education System more relevant and career oriented with focus on quality and excellence. The programs are designed to ensure that graduates who pass out after completing the courses would have knowledge, skills and aptitude for gainful employment in the wage sector in general and self-employment in particular. Student's expertise in the concerned skill will have more opening in service, industry and entrepreneurship development. To enrich and empower the students Shivneri Mahavidyalaya is going to introduce need-based, value added certificate courses has been introduced as a parallel sub-discipline while pursuing their degree level education.

1. Sugar and Alcohol Industry**10 Period**

- 1) Manufacturing of raw cane sugar.
- 2) Refining of raw sugar.
- 3) White sugar.
- 4) Biproducts of sugar industry.
- 5) Manufacturing of ethyl alcohol from molasses.
- 6) Rectified spirit, denatured spirit absolute alcohol and powdered alcohol.
- 7) Bi-products of alcohol industry.

2. Textile Chemistry**10 Period**

- 1) Introduction and classification of fibers
- 2) Sizing:
 - a) Object of sizing, sizing ingredients and their functions.
 - b) General idea of properties of starch, softness, synthetic adhesives.
- 3) Bleaching:
 - a) Brief study of outline of the process of bleaching cotton and synthetic material.
 - b) General idea of processes like singeing, desizing, scouring.
- 4) Dyeing: Study of dyeing, dyeing of cellulosic material and synthetic fibres with dyes like direct, vat, reactive and dispersed dyes.

3. Green Chemistry**10 Period**

- 1) Introduction: Twelve principles of green chemistry.
- 2) Zeolites: Friedel-Craft alkylation and acylation, oxidation of benzene to phenol and benzoquinone, reduction of benzoquinone to hydroquinone.
- 3) Biocatalytic reactions: hydroxylation and oxidation using enzymes.
- 4) Introduction to microwave assisted reactions.

Reference books:

1. Industrial chemistry by R. K. Das, Asia publication Mumbai.
2. Rigegels hand book of industrial chemistry by J. A. Kent, Van, Nostrard, London.
3. Chemistry process industries by shreve and Brinic- Ostim, Magraw Hill New York.
4. Biotechnology and applied microbiology by Alani and Moo-young.



5. Immobilize Biocatalysis by Joy Wleser
6. Advances in green chemistry: chemical synthesis using microwave irradiation by R. S. Varma.
7. Green chemistry: Environment friendly alternatives: by Rashmi Sanghi and M. M. shrivastav (Eds) © 2003 Narosa publishing house New Delhi India.
8. Textile Science by J. T. Marsh
9. Book of textile by A. J. Hall.
10. Sizing by D. B. Ajagaonakar
11. Bleaching by V. A. Sheni.
12. Dyeing by V. A. Sheni.
13. Principles of inorganic chemistry by Puri, Sharma and Kalia.
14. Text Book of inorganic chemistry by K. N. Upadhyay Vikas publishing House New Delhi.

| | |
|-------------------|---|
| Objective(s) | The aim of this paper is to expose the students with the knowledge in Sugar and Alcohol Industry, Textile Chemistry and Green Chemistry |
| Course Outcome(s) | |
| CO1 | Understand the Basic concept of Sugar and Alcohol Industry |
| CO2 | To enable the students to understand the classification of Fibers |
| CO3 | To learn the basic concept and classification of Inorganic Polymers |
| CO4 | Able to understand the theory of green chemistry |
| CO5 | Ability to apply green chemical laboratory techniques |

Scope of the course:

1. Globalization of education and economy has led to reorient and reshape its policies and programmes to make the current Indian Higher Education System more relevant and career-oriented with focus on quality and excellence.
2. Demand and scope for graduates having certificate course are visible in the applied fields of almost all basic/core disciplines.
3. To meet this challenge, Shivneri College would like to encourage incorporation of value added, certificate courses to be opted by students as a parallel sub-discipline while pursuing their degree level education.
4. Our daily need is industry based, We cannot move a single step without the chemistry and industry.
5. We need food which is based on Agricultural industry. We need shelter which is based on industry. What we use for 24 hours each day is coming from industry. So we must have knowledge about industrial chemistry.
6. It is envisaged that professionally qualified graduates with a sound knowledge and expertise in the discipline, **Industrial Chemistry** will have more openings in service, industry and self-employment sectors.


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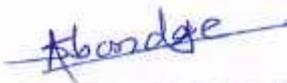
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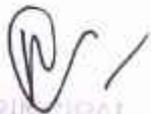
DEPARTMENT OF CHEMISTRY

CERTIFICATE COURSE IN INDUSTRIAL CHEMISTRY

Student Enrollment List
Academic Year 2022-2023

| Sr. No. | Name Of Student | Class |
|---------|-------------------------------|----------|
| 1 | SAYED ZAFREEN INUS | B Sc T Y |
| 2 | SAYYAD AMARIN YUNUS | B Sc T Y |
| 3 | MUDE RADHA VINAYAK | B Sc T Y |
| 4 | SAKOLE KANCHAN PRADIP | B Sc T Y |
| 5 | AWALKONDE MAYURI GURUNATH | B Sc T Y |
| 6 | KINIKAR PRANITA ANANT | B Sc T Y |
| 7 | TIDKE RUTUJA BHAURAO | B Sc T Y |
| 8 | SURVASE SHWETA DNYANOBA | B Sc T Y |
| 9 | KINE KRISHNA UDDHAVRAO | B Sc T Y |
| 10 | MOTIPAWALE RUTUJA SANTARAM | B Sc T Y |
| 11 | BODKE SHUBHANGI KASHINATH | B Sc T Y |
| 12 | DONGARE VAIBHAV DHONDIRAM | B Sc T Y |
| 13 | PATIL SHUBHANGI VASANTRAO | B Sc T Y |
| 14 | SHINDE DEEPALI GUNWANT | B Sc T Y |
| 15 | SUDE RUTUJA SANJAY | B Sc T Y |
| 16 | MAHAMUNI MAHESH JIVANRAO | B Sc T Y |
| 17 | MADALE PRIYANKA ANIL (B) | B Sc T Y |
| 18 | GAIKWAD DNYANESHWAR UDHAV (B) | B Sc T Y |
| 19 | REDDY ANURADHA KASHINATH (B) | B Sc T Y |
| 20 | SHINDE SHUBHAM SURESH (B) | B Sc T Y |


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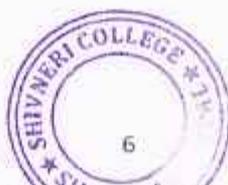
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DEPARTMENT OF CHEMISTRY
CERTIFICATE COURSE IN INDUSTRIAL CHEMISTRY

Time Table
Academic Year 2022-2023

| Time / Day | 09:10 To 10:00 AM | 03:50 To 04:40 PM |
|------------|--|--|
| Monday | | |
| Tuesday | | |
| Wednesday | | Certificate course In Industrial Chemistry |
| Thursday | | Certificate course In Industrial Chemistry |
| Friday | Certificate course In Industrial Chemistry | |
| Saturday | Certificate course In Industrial Chemistry | |

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SHIVNERI MAHAVIDYALAYA SHIRUR ANANTPAL DIST LATUR
DEPARTMENT OF CHEMISTRY
CERTIFICATE COURSE IN INDUSTRIAL CHEMISTRY

Student Attendance

Academic Year 2022-2023

Month – July 2022

| Sr No | Name Of Student | 06 | 07 | 08 | 09 | 13 | 14 | 15 | 16 | 20 | 21 | 22 | 23 | 27 | 28 | 29 | 30 |
|-------|----------------------------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| 1 | SAYED ZAFREEN INUS | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P |
| 2 | SAYYAD AMARIN YUNUS | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P |
| 3 | MUDE RADHA VINAYAK | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P |
| 4 | SAKOLE KANCHAN PRADIP | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P |
| 5 | AWALKONDE MAYURI GURUNATH | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P |
| 6 | KINIKAR PRANITA ANANT | P | P | P | P | P | P | P | P | A | P | P | P | P | P | P | P |
| 7 | TIDKE RUTUJA BHAURAO | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P |
| 8 | SURVASE SHWETA DNYANOBA | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P |
| 9 | KINE KRISHNA UDDHAVRAO | P | P | P | P | A | P | P | P | P | P | P | P | P | P | P | P |
| 10 | MOTIPAWALE RUTUJA SANTARAM | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P |
| 11 | BODKE SHUBHANGI KASHINATH | P | P | P | P | P | P | P | P | P | P | A | P | P | P | P | P |
| 12 | DONGARE VAIBHAV DHONDIRAM | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P |
| 13 | PATIL SHUBHANGI VASANTRAO | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P |
| 14 | SHINDE DEEPALI GUNWANT | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P |
| 15 | SUDE RUTUJA SANJAY | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P |

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|----|-------------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 16 | MAHAMUNI MAHESH JIVANRAO | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P |
| 17 | MADALE PRIYANKA ANIL (B) | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P |
| 18 | GAIKWAD DNYANESHWAR UDHAV (B) | P | P | P | P | P | P | P | P | A | P | P | P | P | P | P | P |
| 19 | REDDY ANURADHA KASHINATH (B) | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P |
| 20 | SHINDE SHUBHAM SURESH (B) | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P |

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SHIVNERI MAHAVIDYALAYA SHIRUR ANANTPAL DIST LATUR
DEPARTMENT OF CHEMISTRY
CERTIFICATE COURSE IN INDUSTRIAL CHEMISTRY

Student Attendance
Academic Year 2022-2023
Month – August 2022

| Sr No | Name Of Student | 03 | 04 | 05 | 06 | 10 | 11 | 12 | 13 | 18 | 19 | 20 | 25 | 26 | 27 |
|-------|----------------------------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| 1 | SAYED ZAFREEN INUS | P | P | P | P | P | P | P | P | P | P | P | P | P | P |
| 2 | SAYYAD AMARIN YUNUS | P | P | P | P | P | P | P | P | P | P | P | P | P | P |
| 3 | MUDE RADHA VINAYAK | P | P | P | P | P | P | P | P | P | P | P | P | P | P |
| 4 | SAKOLE KANCHAN PRADIP | P | P | P | P | P | P | P | P | P | P | P | P | P | P |
| 5 | AWALKONDE MAYURI GURUNATH | P | P | P | P | P | P | P | P | P | P | P | P | P | P |
| 6 | KINIKAR PRANITA ANANT | P | P | P | P | P | P | P | P | A | P | P | P | P | P |
| 7 | TIDKE RUTUJA BHAURAO | P | P | P | P | P | P | P | P | P | P | P | P | P | P |
| 8 | SURVASE SHWETA DNYANOBA | P | P | P | P | P | P | P | P | P | P | P | P | P | A |
| 9 | KINE KRISHNA UDDHAVRAO | P | P | P | P | A | P | P | P | P | P | P | P | P | P |
| 10 | MOTIPAWALE RUTUJA SANTARAM | P | P | P | P | P | P | P | P | P | P | P | P | P | P |
| 11 | BODKE SHUBHANGI KASHINATH | P | P | P | P | P | P | P | P | P | P | A | P | P | P |
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| 13 | PATIL SHUBHANGI VASANTRAO | P | P | P | P | P | P | P | P | P | P | P | P | P | P |
| 14 | SHINDE DEEPAI GUNWANT | P | P | P | P | P | P | P | P | P | P | P | P | P | P |
| 15 | SUDE RUTUJA SANJAY | P | P | P | P | P | P | P | P | P | P | P | P | P | P |
| 16 | MAHAMUNI MAHESH JIVANRAO | P | P | P | P | P | P | P | P | P | P | P | P | P | P |
| 17 | MADALE | P | P | P | P | P | P | P | P | P | P | P | P | P | P |

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|----|-------------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | PRIYANKA ANIL (B) | | | | | | | | | | | | | | |
| 18 | GAIKWAD DNYANESHWAR UDHAV (B) | P | P | P | P | P | P | P | P | A | P | P | P | P | P |
| 19 | REDDY ANURADHA KASHINATH (B) | P | P | P | P | P | P | P | P | P | P | P | P | P | P |
| 20 | SHINDE SHUBHAM SURESH (B) | P | P | P | P | P | P | P | P | P | P | P | P | P | A |

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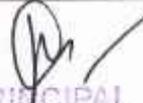
Academic Year 2022-2023

Exam Seat Number

| Sr. No. | Name Of Student | Seat No |
|---------|-------------------------------|-----------|
| 1 | SAYED ZAFREEN INUS | CCIC34701 |
| 2 | SAYYAD AMARIN YUNUS | CCIC34702 |
| 3 | MUDE RADHA VINAYAK | CCIC34703 |
| 4 | SAKOLE KANCHAN PRADIP | CCIC34704 |
| 5 | AWALKONDE MAYURI GURUNATH | CCIC34705 |
| 6 | KINIKAR PRANITA ANANT | CCIC34706 |
| 7 | TIDKE RUTUJA BHAURAO | CCIC34707 |
| 8 | SURVASE SHWETA DNYANOBA | CCIC34708 |
| 9 | KINE KRISHNA UDDHAVRAO | CCIC34709 |
| 10 | MOTIPAWALE RUTUJA SANTARAM | CCIC34710 |
| 11 | BODKE SHUBHANGI KASHINATH | CCIC34711 |
| 12 | DONGARE VAIBHAV DHONDIRAM | CCIC34712 |
| 13 | PATIL SHUBHANGI VASANTRAO | CCIC34713 |
| 14 | SHINDE DEEPALI GUNWANT | CCIC34714 |
| 15 | SUDE RUTUJA SANJAY | CCIC34715 |
| 16 | MAHAMUNI MAHESH JIVANRAO | CCIC34716 |
| 17 | MADALE PRIYANKA ANIL (B) | CCIC34717 |
| 18 | GAIKWAD DNYANESHWAR UDHAV (B) | CCIC34718 |
| 19 | REDDY ANURADHA KASHINATH (B) | CCIC34719 |
| 20 | SHINDE SHUBHAM SURESH (B) | CCIC34720 |


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DEPARTMENT OF CHEMISTRY

CERTIFICATE COURSE IN INDUSTRIAL CHEMISTRY

Choice Based Credit System (CBCS)

B. Sc. Third Year (Semester – V)

(Academic Year 2022-2023)

End Semester Examination-2022

Question Paper (MCQ Pattern)

Time: - 01 Hrs

Maximum Marks: - 40

-
- N. B. :-1. All questions are compulsory.
2. Each question carries one mark.
-

- 1) Granulated sugar contains what % Sucrose?
 - A. 75
 - B. 60
 - C. 99.93
 - D. 80
- 2) How many sugar mills are currently installed in Pakistan?
 - A. 58
 - B. 78
 - C. 88
 - D. 68
- 3) Granulated sugar includes ____
 - A. Glucose
 - B. Sucrose
 - C. Fructose
 - D. Maltose
- 4) Which steps is related with sugar manufacturing?
 - A. Juice purification
 - B. Juice concentration
 - C. Juice extraction
 - D. All of these
- 5) Which techniques is involved to remove soluble and insoluble impurities from juice?
 - A. Filtration
 - B. Phosphatation
 - C. Defecation
 - D. Sulphitation
- 6) The procedure of addition of phosphoric acid and lime to hot juice is known as
 - A. Phosphatation
 - B. Filtration



- C. Defecation
D. Sulphitation
- 7) **Sugar crystals impregnated with thick syrup/molasses is known as**
A. Molasses
B. Masecuite
C. Raw sugar
D. All of these
- 8) **The sugar obtained from centrifugation is known as**
A. Raw sugar
B. Refined sugar
C. Masecuite
D. Molasses
- 9) **The major carbohydrate of sugarcane is**
A. Fructose
B. Sucrose
C. Glucose
D. Maltose
- 10) **For the evaporation of liquids that are heat sensitive, Which evaporators are helpful and used?**
A. Horizontal tube
B. Vacuum
C. Open Pan
D. Vertical tube
- 11) **Sucrose is a disaccharide consist of two monosaccharide**
A. Glucose and galactose
B. Glucose and fructose
C. Glucose and glucose
D. Glucose and lactose
- 12) **Treatment of sugar cane juice with lime is known as**
A. Washing
B. Affination
C. Defecation
D. Steeping
- 13) **The juice is allowed to boil at lower temperatures to protect the sugar from which process?**
A. Hardening
B. Caramelization
C. Solubility in water
D. Dewatering
- 14) **Which of the following is a greener route to produce ethanal commercially?**
A. Catalytic cracking of ethanol
B. Oxidation of ethene with an ionic catalyst
C. Steam reforming of methanol
D. Dehydrogenation of ethylene
- 15) **Name the conventional solvent that was used for dry cleaning purposes which later confirmed to be a suspected carcinogen.**



- A. Supercritical CO₂
- B. Phenanthrene
- C. Tetrachloroethene
- D. Benzene aldehyde

16) Which of the following is not a principle of Green Chemistry?

- A. Green solvents and auxiliaries
- B. Use of renewable feedstock
- C. Hazardous chemical synthesis
- D. Design for energy efficiency

17) Green chemistry is the design of chemical products and processes that reduce or eliminate the use and generation of hazardous substances. Identify the technique used in this area.

- A. Bioamplification
- B. Polymer manufacturing
- C. Pesticide synthesis
- D. Use of sunlight and Microwave-assisted reaction

18) Which of the following gas was traditionally used to bleach paper?

- A. Sulfur
- B. Carbon dioxide
- C. Chlorine
- D. Fluorine

19) Which lines add softness and roundness to a garment?

- A. Curved
- B. Diagonal
- C. Vertical
- D. Horizontal

20) The less expensive copies of designer's garments are called _____.

- A. Knock-off
- B. Seconds
- C. B-Grade
- D. Both a & b

21) If no water penetrate in fabric, it will be _____.

- A. Waterproof
- B. Water-repellent
- C. Stain
- D. None of these

22) When already dyed fabric is printed, it is called _____.

- A. Double printing
- B. Another printing
- C. Over printing
- D. All of these

23) Batik is ____ dyeing technique.

- A. Resist
- B. Tie & Dye
- C. Egyptian
- D. Stock



24) In lab test which fiber dissolved in acetone is?

- A. Nylon
- B. Acetate
- C. Rayon
- D. Orlon

25) Acetate has only _____ sunlight resistance.

- A. Excellent
- B. Good
- C. Fair
- D. Bad

26) Any style that is accepted for a short period of time called _____.

- A. Tradition
- B. Classic
- C. Fad
- D. Old-fashioned

27) Surface ornamentation of fabric is called.

- A. Fashion designing
- B. Textile designing
- C. Designing
- D. None of these

28) _____ are short fibers that measured in inches or centimeters.

- A. Filament
- B. Staple
- C. Coarse
- D. Bonded

29) Cotton is known as our crop.

- A. Finished
- B. Bleached
- C. Cash
- D. Calendered

30) Part of the garment that turns back below the collar is called _____.

- A. Yoke
- B. Hem
- C. Lapel
- D. Trim

31) What is the full form of VSWR in the context of microwave engineering?

- A. Vibration simplification wave ratio
- B. Vibration standing wave ratio
- C. Voltage simplification wave ratio
- D. Voltage standing wave ratio

32) How many stub-matching approaches are used at higher microwave frequencies?

- A. 5
- B. 4
- C. 3
- D. 2

33) Transmission lines used at microwave frequencies can be roughly categorized into how many categories?



- A. 5
- B. 4
- C. 3
- D. 2

34) Transmission lines with more than one conductor falls under which category of transmission lines used at microwave frequencies?

- A. Multi-conductor lines
- B. Single conductor lines
- C. Open boundary structures
- D. None of these

35) Sizing is a _____ treatment.

- A. Cleaning
- B. Finishing
- C. Dyeing
- D. Printing

36) Principles of design are.....

- A. Proportion
- B. Balance
- C. Rhythm
- D. All of these

37)The designer of designed garments for High class.

- A. Haute Couture
- B. Local
- C. Pret
- D. Both a & b

38) Other name for screen printing is _____.

- A. Digital printing
- B. Transfer printing
- C. Synthetic printing
- D. Silk screen printing

39) In..... a mesh is used to transfer ink onto a substrate.

- A. Dyeing
- B. Batik
- C. Screen printing
- D. Weaving

40) Knitting needles by hand should be _____ inches long.

- A. 7 to 14
- B. 1 to 7
- C. 14 to 21
- D. None of these



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DEPARTMENT OF CHEMISTRY

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B. Sc. Third Year (Semester – V)

(Academic Year 2022-2023)

End Semester Examination-2022

(MCQ Pattern)

Answer Key

Time: 01 Hour

Marks: 40.

- NB:** 1. All questions are compulsory.
2. Each questions carries one mark.

| Sr. No. | Answer | Sr. No. | Answer |
|---------|--------|---------|--------|
| 1 | B | 21 | A |
| 2 | C | 22 | C |
| 3 | B | 23 | A |
| 4 | D | 24 | B |
| 5 | C | 25 | C |
| 6 | A | 26 | C |
| 7 | B | 27 | B |
| 8 | A | 28 | B |
| 9 | B | 29 | C |
| 10 | B | 30 | C |
| 11 | B | 31 | D |
| 12 | C | 32 | D |
| 13 | B | 33 | C |
| 14 | B | 34 | A |
| 15 | C | 35 | B |
| 16 | C | 36 | D |
| 17 | D | 37 | B |
| 18 | C | 38 | D |
| 19 | A | 39 | C |
| 20 | A | 40 | A |



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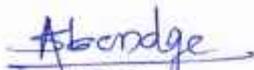
CERTIFICATE

This is to certify that, Mr. /Miss. **SAYED ZAFREEN INUS**

Has Successfully Completed the Certificate Course in **Industrial Chemistry conducted** by The Department of **Chemistry** during the Academic year 2022-23

Hence Certified.

Date- 20/09/2022


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Dr. A. S. BONDGE
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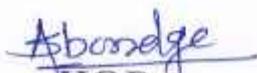
CERTIFICATE

This is to certify that, Mr. /Miss. **SAYYAD AMARIN YUNUS**

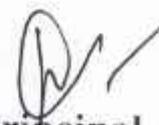
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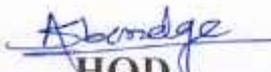
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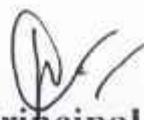
This is to certify that, Mr. /Miss. **MUDE RADHA VINAYAK**

Has Successfully Completed the Certificate Course in **Industrial Chemistry** conducted by The Department of **Chemistry** during the Academic year 2022-23

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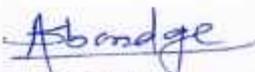
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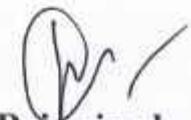
This is to certify that, Mr. /Miss. **SAKOLE KANCHAN PRADIP**

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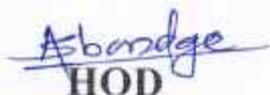


CERTIFICATE

This is to certify that, Mr. /Miss. **AWALKONDE MAYURI GURUNATH**
Has Successfully Completed the Certificate Course in **Industrial
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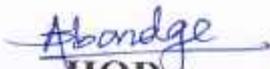
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This is to certify that, Mr. /Miss. **KINIKAR PRANITA ANANT**

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This is to certify that, Mr. /Miss. **TIDKE RUTUJA BHAURAO**

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Date- 20/09/2022


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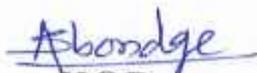
CERTIFICATE

This is to certify that, Mr. /Miss. **SURVASE SHWETA DNYANOBA**

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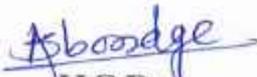


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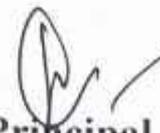
This is to certify that, Mr. /Miss. **KINE KRISHNA UDDHAVRAO**
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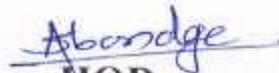


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This is to certify that, Mr. /Miss. **MOTIPAWALE RUTUJA SANTARAM**
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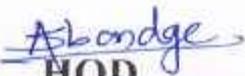


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This is to certify that, Mr. /Miss. **BODKE SHUBHANGI KASHINATH**
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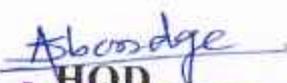


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This is to certify that, Mr. /Miss. **DONGARE VAIBHAV DHONDIRAM**
Has Successfully Completed the Certificate Course in **Industrial
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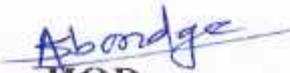


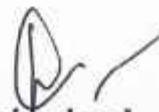
CERTIFICATE

This is to certify that, Mr. /Miss. **PATIL SHUBHANGI VASANTRAO**
Has Successfully Completed the Certificate Course in **Industrial
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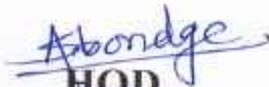


CERTIFICATE

This is to certify that, Mr. /Miss. **SHINDE DEEPALI GUNWANT**
Has Successfully Completed the Certificate Course in **Industrial
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Date- 20/09/2022


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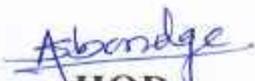
CERTIFICATE

This is to certify that, Mr. /Miss. **SUDE RUTUJA SANJAY**

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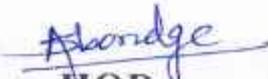


CERTIFICATE

This is to certify that, Mr. /Miss. **MAHAMUNI MAHESH JIVANRAO**
Has Successfully Completed the Certificate Course in **Industrial
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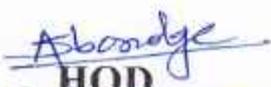
CERTIFICATE

This is to certify that, Mr. /Miss. **MADALE PRIYANKA ANIL**

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CERTIFICATE

This is to certify that, Mr. /Miss. **GAIKWAD DNYANESHWAR UDHAV**
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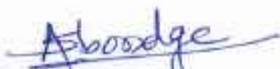
CERTIFICATE

This is to certify that, Mr. /Miss. **REDDY ANURADHA KASHINATH**

Has Successfully Completed the Certificate Course in **Industrial Chemistry** conducted by The Department of **Chemistry** during the Academic year 2022-23

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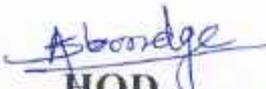
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This is to certify that, Mr. /Miss. **SHINDE SHUBHAM SURESH**

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