

To,
The Principal
SSES Amt's Science College,
Congress Nagar, Nagpur-12

Subject: For permission to conduct the add on courses in the department during the session
2023-2024

Respected Sir,

This is to request you that, the teachers of our Chemistry department have prepared the syllabus and modules of the 30 hours certificate courses for the session 2023-2024.

The details of the course module, syllabus and time table is submitted here with.

Hence please permit to run the add on courses and oblige me.

Thanking you

Yoursslely

(Prof. R. U. Khope)

Professor & Head
Department of Chemistry,
Shri Shivaji Sciar.ce C !!1:cc
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24/6/23

Permitted
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SSES Amt's SCIENCE COLLEGE
Congress Nagar, Nagpur

Notice

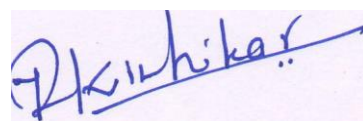
Date: 12/11/2023

All the students are hereby informed that, Department of Chemistry is going to start a Certificate course on "Physicochemical Study of Cement and its perspective". Students those who are interested to enroll kindly contact Dr.V.R.Kinhikar.

Contact no. 9823388226

***Note**

Above Theory and Practical classes will be commencing from 15/12/2023 to 24/02/2024. All the students (admitted) are informed to remain present for theory and practical session . Kindly refer the below time table for the same.



Course Coordinator

Dr.V.R.Kinhikar

Assistant Professor
Department of Chemistry
Shri Shivaji Science College,
Congress Nagc,r,
NAGPUR-440012.



Shri Satguru Education Society, Annavati

SCIENCE COLLEGE

CO'DIN'ESS N'ap'r. NIM'PAU-12 (Ht.S.). J'ndla

Member of AFQS, Recognized Centre for Higher Learning
Under 'JAMABHI Scheme', DDC, New Delhi



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Course Coordinator Dr. V.R.Kinhikar



COURSE INTRODUCTION

Concrete analysis is an important aspect of construction projects because it helps to understand the structural integrity and durability of buildings and infrastructure. In this blog post, we will look at the importance of concrete analysis in construction projects and how it can help to ensure quality and safety. Concrete analysis is about testing and evaluating concrete properties such as strength (PSI), durability, and

composition. We can analyze concrete using a variety of testing methods and equipment, allowing you to make more informed decisions about repairing and renovating your structures. Concrete analysis provides valuable information to engineers and contractors in order for them to make informed decisions about the design, construction, and maintenance of concrete structures. It provides valuable data that assists engineers and contractors in making informed decisions about renovating their structures, identifying structural flaws, and maintaining the concrete's integrity. Concrete analysis also ensures adherence to industry standards and codes, increases durability, and lowers the risk of structural failure.

Course Objective:

- To impart understanding of various aspects of design of Reinforced Concrete.
- To develop analytical and experimental skills to determine various stresses acting on soil material.
- To impart understanding of various aspects related to ingredients and properties of concrete and concrete mix design

Course Outcome :

After successful completion of this course, the student will be able to:

C0-1 Understand properties and role of ingredients like cement, aggregate etc. to produce better quality concrete

C0-2 Understand the need for special concrete

C0-3 To select materials for cement concrete roads.

C0-4 Understand the behavior of fresh and hardened concrete.

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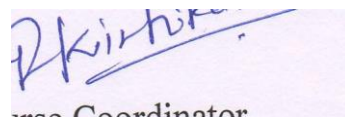
Session 2023-24

Report on

"Physicochemical Study of Cement and its perspective"

SSES Amt's Science College, Nagpur, department of Chemistry, organized a 30-hour skill development course titled "Physicochemical Analysis of Cement and Its Perspectives" from 15th December 2023 to 24th February 2024 held every Friday and Saturday, the course aimed to enhance students' understanding of cement's properties, applications, and analysis techniques. Total of 86 students participated, benefiting from theoretical lectures on cement composition and properties, alongside practical sessions providing hands-on experience in determining chemical composition, analyzing physical properties, and testing cement strength and hydration effects.

As per scheduled time table weekly two theory classes and one practical session conducted for the students. Written exams and practical tests were conducted to evaluate students' theoretical knowledge and practical skills. This course significantly deepened students' knowledge, equipped them with industry-relevant practical skills, and boosted their confidence in performing complex analyses. The structured combination of theoretical and practical elements ensured a well-rounded education, preparing students for future opportunities in the cement industry and related fields.



Course Coordinator

Dr.V.R.Kinhikar

Department of Chemistry
Shri Shivaji Science College,
Congress Nagar,
NAGPUR-440012.

SYLLABUS

Certificate course 30 hrs (10 weeks)

Physicochemical Study of Cement and its Industrial Perspective

Contents of Syllabus

Theory

Unit-I: Introduction of Cement

- Introduction of Cement.
- Cement: Raw materials.
- constitutional compounds & its properties.
- Process parameters.

Unit II Types and Manufacturing process of Cement.

- Types of Portland cement.
- Manufacture of Portland cement by wet and dry process,
- Rotary Kiln, different type of clinkerisation process.
- Advantages and Disadvantages of each process.

Unit III Types of Grinding Mills

- Types of Grinding processes,
- Different types of grinding mills.

Unit IV Setting and Hardening process of Cement.

- Study of Ball mill, and Roller press mill.
- Setting and hardening of cement, Cement additives & admixtures
- Role of gypsum in cement hydration process, hydration of Portland cement.
- Hydration of Portland cement at increased temperature.

Practical Component: (Any 5)

Physical & Chemical testing of Limestone (2 hours/week/batch)

1. Physical analysis of Limestone.
2. Determination of calcium carbonate and magnesium carbonate of Limestone.
3. Soundness test
4. Setting time test
5. Consistency Test
6. Compressive strength clinker.

Distribution of Practical marks: -

1. Practical performance -05 marks
2. Practical Record- IO marks
4. Viva - Voce - 05 marks

Books Recommended:

1. A Text Book of Engineering Chemistry, by S.S.Dara, S.Chand & Co., New Delhi.
2. A Text Book of Engineering Chemistry, by Jain & Jain, Dhanpat Rai Publishing Co., New Delhi.
3. Industrial Chemistry by B.K.Sharma Goel Pub. House, Meerut.
4. Advanced Inorganic Chemistry, Vol.II, by Satya Prakash, G.D.Tuli, S.K. Basu & R.D.Madan.
5. A Hand book on Surface Mining Technology: Samir Kumar Dash, Sagarprakashan, Khargpur.
3. Norms for limestone exploration for cement manufacture :NCCBM
6. National Inventory of cement grade limestone deposits in India :NCCBM
7. SME, Mining Engineering Hand Book; Arthur B. Cummins, Ivan A. Given: Society of Mining Engineers of the American Institute of Mining, Metallurgical and Petroleum Engineers, Inc, New York.

SSES Amt's SCIENCE COLLEGE, CONGRESS NAGAR, NAGPUR-12

SYLLABUS FOR CERTIFICATE COURSE IN

• Physicochemical Study of Cement and its Industrial Perspective

Duration 30 hrs (10 weeks)

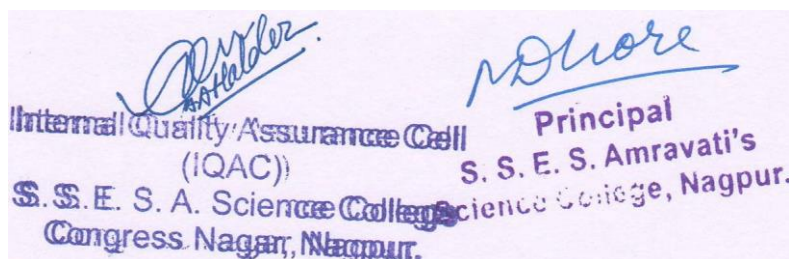
(With effect from the academic year 2023-2024)

The Structure of the Syllabus for the Certificate course along with the distribution of marks is also displayed in the following Table

Course	Theory Papers and Practical	Marks		Total Marks	
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Certificate Course in Physicochemical Study of Cement and its Industrial Perspective	Theory paper- Physicochemical Study of Cement and its Industrial Perspective	80	20		100
		Grand total			100

*Internal assessment -

- Based on students' attendance and performance during theory, practical & assignments/case study



Course Coordinator

Dr. V.R. Kinhikar

Assistant Professor
Department of Chemistry
Shri Shivaji Science College,
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NAGPUR-440012.

6. National Inventory of cement grade limestone deposits in India :NCCBM
 7. SME, Mining Engineering Hand Book; Arthur B. Cummins, Ivan A. Given:
 Society of Mining Engineers of the American Institute of Mining, Metallurgical and
 Petroleum Engineers, Inc, New York.

**SSES Amt's SCIENCE COLLEGE, CONGRESS NAGAR,
NAGPUR-12**

SYLLABUS FOR CERTIFICATE COURSE IN

Physicochemical Study of Cement and its Industrial Perspective

Contents of Syllabus

(With effect from the academic year 2023-2024)

Teaching Plan 30 hrs(10 weeks)

Theory			
Weeks	Day	Topic	Contents
1	1	Unit-I: Introduction of Cement	Introduction of Cement.
	2		Cement: Raw materials.
	3		Cement: Raw materials.
2	4	Unit-I: Introduction of Cement	constitutional compounds& its properties
	5		constitutional compounds& its properties.
	6		Process parameters


 Assistant Professor
 Department of Chemistry
 Shri Shivaji Science College,
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NAGPUR-12**

SYLLABUS FOR CERTIFICATE COURSE IN

Physicochemical Study of Cement and its Industrial Perspective

Contents of Syllabus

(With effect from the academic year 2023-2024)

Teaching Plan 30 hrs(10 weeks)

Theory			
Weeks	Day	Topic	Contents
1	1	Unit-I: Introduction of Cement	Introduction of Cement.
	2		Cement: Raw materials.
	3		Cement: Raw materials.
2	4	Unit-I: Introduction of Cement	constitutional compounds& its properties
	5		constitutional compounds& its properties.
	6		Process parameters
3	7	Unit II Types and Manufacturing process of Cement.	Types of Portland cement.
	8		Types of Portland cement

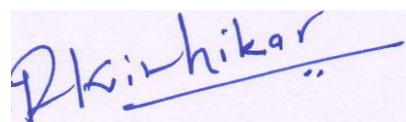

Assistant Professor

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Shri Shiv=iji Sclen e College,,
Congress Nag(f,
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3	7	Unit TI Types and Manufacturing process of Cement.	Types of Portland cement.
	8		Types of Portland cement
	9		Manufacture of Portland cement by wet and dry process,
4	10	Unit II Types and Manufacturing process of Cement.	Manufacture of Portland cement by wet and dry process,
	11		Rotary Kiln, different type of clinkerisation process.
	12		Rotary Kiln, different type of clinkerisation process.
5	13	Unit II Types and Manufacturing process of Cement. & Unit III Types of Grinding Mills	Advantages and Disadvantages of each process
	14		Advantages and Disadvantages of each process.
	15		Types of Grinding processes
6	16	Unit III Types of Grinding Mills	Types of Grinding processes
	17		Different types of grinding mills
	18		Different types of grinding mills.

R. K. Chakraborty

7	19	Unit IV Setting and Hardening process of Cement.	Study of Ball mill, and Roller press mill.
	20		Study of Ball mill, and Roller press mill.
	21		Setting and hardening of cement, Cement additives & admixtures
8	22	Unit IV Setting and Hardening process of Cement.	Setting and hardening of cement, Cement additives & admixtures
	23		Setting and hardening of cement, Cement additives & admixtures
	24		Role of gypsum in cement hydration process, hydration of Portland cement. Hydration of Portland cement at increased
9	25	Practical (2 hours/week/batch)	Physical & Chemical testing of Limestone
	26		Compressive strength clinker
	27		Soundness of Cement Test
10	28	Practical (2 hours/week/batch)	Determination of calcium carbonate and magnesium carbonate of Limestone.
	29		Consistency Test
	30		Revision of Syllabus



Course Coordinator

Dr.V.R.Kinhikar

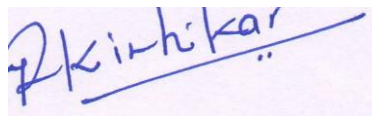
Assistant Professor
Department of Chem4stry
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 NAGPUR.-440 12.

SSES Amt's SCIENCE COLLEGE
Congress Nagar, Nagpur-12

Time Table
Session 2023-2024

Name of Course "Physicochemical Study of Cement and its perspective"

Day	Room no	Time	Theory/Practical
Friday	C9	4.00 pm to 5.00 pm	Theory
Saturday	Lab A	4.00 pm to 6.00 pm	Practical



Course Coordinator

Dr. V.R. Kinhikar

Assistant Professor
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12/11/2023

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Registration of Students

- ① Laxmi Bawankule
- ② Shriya Bhimte
- ③ chaudhary Ayush
- ④ Aradhana Bhasmote
- ⑤ Sejal Borkar
- ⑥ Vaidavi Chikram
- ⑦ Shradha Bante
- ⑧ Renuka Ayyagiri
- ⑨ Devyani Alenc
- ⑩ Khushi Behar
- ⑪ Pratik Atram
- ⑫ Priya Fulkuwar
- ⑬ Soksham Dhok
- ⑭ Mohini Chapke
- ⑮ Swejal Gajbhiye
- ⑯ Prabudha Dand
- ⑰ Chetna Bhaingar
- ⑱ Prajwal Datar
- ⑲ Kalash Barsagade
- ⑳ Tasmiya Baig
- ㉑ Unnati Atram
- ㉒ Prabudha Dand
- ㉓ Pratik Atram
- ㉔ Tanishka Chaudhary
- ㉕ Janhvi Deshmukh
- ㉖ Harshini Kolhe
- ㉗ Arya Kundrapawar

- 28) Anushka Ganvir
- 29) Samruddhi Jibhkar
- 30) Avari Kale
- 31) Mounali Kale
- 32) Sanyukta Mansar
- 33) Mrudula Pathode
- 34) Prerna Rahangdale
- 35) Mohini Raut
- 36) Shalini Rathod
- 37) Harshada Londhe
- 38) Shreya Kalambe
- 39) Shreya Gupta
- 40) Laxmi Goswami
- 41) Rohanshi Ramteke
- 42) Mohini Raut
- 43) Anuradha Phael
- 44) Shreya Pazihar
- 45) Injila Khan
- 46) Ekta Kasckar
- 47) Saloni Jaiswal
- 48) Madhura Gonnale
- 49) Tejaswi Kubde
- 50) Harshada Londhe
- 51) Himanshi Raut
- 52) Divya Mude
- 53) Shalini Rathod
- 54) Sampada Rajit

- (56) Uday Khairao
- (57) Divya Gaswami
- (58) Gushong Ghaturle
- (59) Gayatri Hedaro
- (60) Ashwini Nahate
- (61) Shruti Mohadikar
- (62) Dakshita Madan
- (63) Annada Pusadkar
- (64) Khushi Rahate
- (65) Rohanshi Ramteke
- (66) **Osh.**
- (67) Twinkle Warhakar
- (68) Vaishnavi Shukla
- (69) Akansha Shinde
- (70) Bhagyshree Shinde
- (71) Vaidhi Upase
- (72) Vaibhav Tidke
- (73) Shipra Singh
- (74) Sanika Raut
- (75) Rashi Sharma
- (76) Mrunmayee Sathwara
- (77) Riya Raut
- (78) Prachi Sarode
- (79) Shrushti Raut
- (80) Sanika Raut
- (81) Kadambai Thakre
- (82) Vaishnavi Shukla
- (83) Falguni Shrivastava

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SSES Amt's SCIENCE COLLEGE
Congress Nagar, Nagpur-12

Session 2023-24

Name of Course "Physicochemical Study of Cement and its perspective"

List of Students

Sr. No.	Name of Students
1	ALONE DEVYANI ANAND
2	ATRAM PRATIKJOGA
3	ATRAM UNNATTI SHASHIKANT
4	AYYAGARI RENUKA SUDHAKAR
5	BAGHEL SONAM SANTOSHKUMAR
6	BAIG TASMIYA HAMID
7	BANTE SHRADDHA GUDDU
8	BARSAGADE KALASH SUDHAKAR
9	BAWANKULE LAXMI DEVIDAS
10	BEHAR KHUSHI RAJU
11	BHAISARE CHETANA DINESH
12	BHASMOTE ARADHANA RAJENDRA
13	BHIMTE SHRIVA SURENDRAKUMAR
14	BORKAR SEJAL RAJESH
15	CHANNE TANISHKA PRAVEEN
16	CHAPKE MOHINI SHANKAR
17	CHAUDHARY AYUSH SHRICHAND
18	CHIKRAM VAIDAVI ARVIND
19	CHOUDHARY VAISHNAVI CHANDRAKANT
20	DATIR PRANJALI ANKALESH
21	DESHMUKH JANHAVI VIRENDRA
22	DHANDE PRABUDHA PRADIP
23	DHOK SOKSHAM NISHANT
24	FULKUWAR PRIYA SANTOSH
25	GAJBHIYE SWEJAL PRASHANT

26	GAJBHIYE TANISHA VISHWAJIT
27	GANVIR ANUSHKA ANIL
28	GHATURLE GRISHMA VINOD
29	GONNADE MADHURIMA SHAILESH
30	GOSWAMI DIVYA VIKAS
31	GOSWAMI LAXMI KISHOR
32	GUPTA SHREYA RAVINDRA
33	HEDAOO GAYATRI MANOJ
34	IRGURALA VIDYA CHANDRAIAH
35	JAISWAL SALONI SATISH
36	JIBHEKAR SAMRUDDHI KISHOR
37	KALAMBE SHREYA GUNWANT
38	KALE AVANI PREMDAS
39	KALE MRUNALI CHANDRAJEET
40	KASEKAR EKTA SANJAY
41	KHADSE CHETANA MORESHWAR
42	KHAIRE UDAY PRAKASH
43	KHAN INJILA NADIM
44	KOLHE HARSHINI ARVIND
45	KUBADE TEJASWI MOTIRAM
46	LONDE HARSHADA RAJESH
47	MADAN DAKSHITA SANJAY
48	MAHAJAN BHUMI SUDHAKAR
49	MANAPURE TANUSHREE ROHIT
50	MANSURE SANYUKTA SANJAY
51	MOHADIKAR SHRUTI PURUSHOTTAM
52	MOHOD SAMRUDDHI SATISH
53	MUDE DIVYA SUDHAKAR
54	NAHATE ASHWINI RAVI
55	PARIHAR SHREYA SUSHILSINGH
56	PATHADE MRUDULA PRAVIN
57	PHAD ANURADHA RAJABHAU
58	PUSADKAR ANNADA VIVEK
59	RAGIT SAMPADA RAVICHANDRA
60	RAHANGDALE PRERNA RUPCHAND
61	RAHATE KHUSHI BHUMIRAJ
62	RAJPUROHIT KALYANI GIRISH
63	RAMTEKE ROHANSHI SHESHRAJ
64	RATHOD SHALINI ANIL
65	RAUT HIMANSHI SUNIL
66	RAUT MOHINI VINOD

67	RAUT RIVA TRILOKCHAND
68	RAUT SANIKA VILAS
69	RAUT SRUSHTI BHIMRAO
70	SAHARE JANVI RAJU
71	SAMRIT SMITA ARVIND
72	SARODEPRACHIDHARMENDRA
73	SATHAWANE MRUNMAYEE PRAMOD
74	SHARMA RASHI SANDEEP
75	SHEIKH SHAHINA AKIL
76	SHENDE BHAGYSHREE VILAS
77	SHENDE MRUDUL RAHUL
78	SHENDE SHRAVANI RAMESH
79	SHINDE AKANSHA VIJAY
80	SHRIRAME FALGUNI SANDIP
81	SHUKLA VAISHNAVI SANJAY
82	SINGH SHIPRA PAWAN
83	THAKARE KADAMBARI SANJAY
84	TIDKE VAIBHAV WAMAN
85	UPASE VAIDEHI MANOHAR
86	WARHEKAR TWINKLE GOKUL

Course Coordinator

Dr.V.R.Kinhikar

Assistant Professor
Department of Chemistry
Shri Shivaji Science College,
Congress Nagar,
NAGPUR-440012.

38	KALE AVANI PREMDAS	p	r	r	j	.	.	f	r	
39	KALE MRUNALI CHANDRAJEET	p	f	p		t		f	p	p
40	KASEKAR EKTA SANJAY		p		.	.	f	f	.	p
41	KHADSECHETANA MORESHWAR		p	p	1'f	p	.	.	p	r
42	KHAIREUDAY PRAKASH		p	f		.	.	.	t	?
43	KHAN INJILA NADIM	r	.	.		p		b	.	f
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46	LONDE HARSHADA RAJESH	.	.	f			l"	.	p	l
47	MADAN DAKSHITA SANJAY	p		r	f	.		f'	f	.
48	MAHAJAN BHUMI SUDHAKAR		r	.		f	t>	.	p	r
49	MANAPURE TANUSHREE ROHIT	r	r	.	.	f	.	r	I	f'
SO	MANSURE SANYUKTA SANJAY		f	r	p	.	.	.	.	j'
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54	NAHATE ASHWINI RAVI	j'	p	f'		f	.	9	.	.
55	PARIHAR SHREYA SUSHILSINGH	p	p		p	f	.	r	r	f
56	PATHADE MRUDULA PRAVIN	0	p	f	p	.	f			.
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63	RAMTEKE ROHANSHI SHESHRAJ		.					r	r	f
64	RATHOD SHALINI ANIL		.		f	b	.	p	.	.
65	RAUT HIMANSHI SUNIL	(j	p	f		f	t>	.	p	r
66	RAUT MOHINI VINOD	p	l'	.	p	f'		f	.	f
67	RAUT RIVA TRILOKCHAND		.	.	r	.		p		p p
68	RAUT SANIKA VILAS	,	.			.	.	.	r	
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71	SAMRIT SMITA ARVIND	r'	p		p	f	r		.	p
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75	SHEIKH SHAHINA AKIL	.	.	p	.	.	8		f	r
76	SHENDE BHAGYSHREE VILAS	p	j	.	p	f	r	p	f	p
77	SHENDE MRUDUL RAHUL		p	.	p	f	r	p	f	p
78	SHENDESHRAVANIRAMESH	,f	p	f	.	j'	f	.	.	.
79	SHINDE AKANSHA VIJAY		p	.	p	.	r	.	r	
80	SHIRAME FALGUNI SANDIP	r	.	r	p	f	p		r	p
81	SHURLA VAISHNAVI SANJAY		.	p	.	f	.	.	.	.
82	SINGH SHIPRA PAWAN	r		p	.	f	.	f	f	r f
83	THAKARE KADAMBARI SANJAY	p	.	.	.	f'	.	.	f	.
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85	UJASE VAIDHI MANOHAR	(	.	r	?	.	p		r	p
86	WARHEKARTWINKLE GOKUL	1	f	f	.	p		r'	.	f'

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Assistant Professor
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SimSh1vaJ1 Science Colleg:e
Congress Nagar,
NAGPUR-4-40012.

38	KALE AVANI PREMDAS	,	p	p	f		f	p	-	f	f
39	KALE MRUNALI CHANDRAJEET	p	p	p	p	p	p	p	R		.
40	KASEKAR EKTA SANJAY					p	p	p	f	p	
41	KHADSE CHETANA MORESHWAR	p	(	0		p	f	p	.	f	p
42	KHAIREUDAY PRAKASH	.	p	p	p	0	f	f	p	p	0
43	KHAN INJILA NADIM	p	.	f	p	p	p	f	p	p	0
44	KOLHE HARSHINI ARVIND	f	p		p	f	p	.	p	p	p
45	KUBADE TEJASWI MOTIRAM	p	.	p	p	f	p	.	.	r	p
46	LONDE HARSHADA RAJESH	.	p	p	0		p	p	.	?	
47	MADAN DAKSHITA SANJAY	.	p	p	p	0	p	.	p	p	0
48	MAHAJAN BHUMISUDHAKAR	p	.	.	f	p		.	.	p	p
49	MANAPURE TANUSHREE ROHIT	p	p	p	p		r>		t	f	1
SO	MANSURE SANYUKTA SANJAY	0	p		f		p	.	p	(	
51	MOHADIKAR SHRUTI PURUSHOTTAM	.	p	p	.	p	(	p		p	
52	MOHOD SAMRUDDHI SATISH		.	p	.	0	p	p	.	.	.
53	MUDE DIVYA SUDHAKAR	p		p	p		.	p	.	p	p
54	NAHATE ASHWINI RAVI	p	p	p	p	f	p	p	f	p	p
55	PARIHARSHREYA SUSHILSINGH	f	0	.		p	p	p	.	p	p
56	PATHADE MRUDULA PRAVIN	p	p	(	p	.		p	f		p
57	PHAD ANURADHA RAJABHAU	p	0	0	p	(		p		p	p
58	PUSADKAR ANNADA VIVEK	f	f		0		r		p	p	.
59	RAGIT SAMPADA RAVICHANDRA	p	p	p		.	p	p	p	p	.
60	RAHANGDALE PRERNA RUPCHAND	p	p	.	p	p	p	p	p	p	p
61	RAHATE KHUSHI BHUMIRAJ	p	p	f	p	p		.		p	
62	RAJPUROHIT KALYANI GIRISH	p	p		p		0	f	f		p
63	RAMTEKE ROHANSHI SHESHRAJ		p	.	p	f	p	.	p	p	p
64	RATHOD SHALINI ANIL	.	.	p	0	p	.	p	f	0	
65	RAUT HIMANSHU SUNIL	.	p	p	f	p	f	.	p	p	
66	RAUT MOHINI VINOD	0	p	.	p	p	p		p	p	
67	RAUT RIVA TRILOKCHAND	0	p		.	.	(	.	r	1	
68	RAUT SANKA VILAS	p	p	p	p	p	p	p	f	p	(
69	RAUT SPOUSHTI BHIMRAO										1
70	SAHARE JANVI RAJU	p	p	p	p		p	.	0		
71	SAMRIT SMITA ARVIND	.	p	p		p	p		p	p	p
72	SARODEPRACHIDHARMENDRA	p	p	r>	p				y	p	
73	SATHAWANE MRUNMAYEE PRAMOD	p	p			p	p		.	r>	
74	SHARMA RASHI SANDEEP	p	p	p		F	p	f	p	>	
75	SHEIKH SHAHINA AKIL	0	.	.	p	p	0		p	p	
76	SHENDE BHAGYSHREE VILAS	p	p		b	.	p	p	p	p	
77	SHENDE MRUDUL RAHUL	p		p	p	p	.	p	p	p	.
78	SHENDE SHRAVANI RAMESH	p		(	p	12	p	p	f	p	
79	SHENDE AKANSHA VIJAY	.	p		.	f>	p	.	p	.	
80	SHRIRAME EALGUNI SANDIP	y	e	.	.	.	p		f	f	
81	SHUKLA VAISHNAVI SANJAY		p	p	p	f	p	p	p	p	p
82	SINGH SHIPRA PAWAN		p	p	p	f	p	p	p	p	p
83	THAKARE KADAMBARI SANJAY	p	p	p	0	r>	p	f	.	r	p
84	TIDKE VAIBHAV WAMAN	.	f		p	p	p	p	f	p	
85	UPASE VAIDEHI MANOHAR			p	.	.	p	p	.	p	
86	WARHEKAR TWINKLE GOKUL	p	.	p	p	p	f	p	.	f	
		p	p	p	.	.	p	p	.	.	.

R. K. Shukla

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Shri Shivaji Education Society Amravati's SSES Amt's Science College Nagpur Certificate Course Attendance for Certificate Course "Physicochemical Study of Cement and its perspective"											
Sr. No.	Name of Students	1	2	3	4	5	6	7	8	9	10
		Date & Theory/ Practical									
1	ALONE DEVYANI ANAND										
2	ATRAM PRATIK JOGA										
3	ATRAM UNNATTI SHASHIKANT										
4	AYYAGARI RENUKA SUDHAKAR										
5	BAGHEL SONAM SANTOSHKUMAR										
6	BAIG TASMIYA HAMID										
7	BANTE SHRADDHA GUDDU										
8	BARSAGADE KALASH SUDHAKAR										
9	BAWANKULE LAXMI DEVIDAS										
10	BEHAR KHUSHI RAJU										
11	BHAISARE CHETANA DINESH										
12	BHASMOTE ARADHANA RAJENDRA										
13	BHIMTE SHRIYA SURENDRAKUMAR										
14	BORKAR SEJAL RAJESH										
15	CHANNE TANISHKA PRAVEEN										
16	CHAPKE MOHINI SHANKAR										
17	CHAUDHARY AYUSH SHRICHAND										
18	CHIKRAM VAIDAVI ARVIND										
19	CHOUDHARY VAISHNAVI CHANDRAKANT										
20	DATIR PRANJALI ANKALESH										
21	DESHMUKH JANHAVI VIRENDRA										
22	DHANDE PRABUDHA PRADIP										
23	DHOK SOKSHAM NISHANT										
24	FULKUWAR PRIYA SANTOSH										
25	GAJBHIYE SWEJAL PRASHANT										
26	GAJBHIYE TANISHA VISHWAJIT										
27	GANVIR ANUSHKA ANIL										
28	GHATURLE GRISHMA VINOD										
29	GONNADE MADHURIMA SHAILESH										
30	GOSWAMI DIVYA VIKAS										
31	GOSWAMI LAXMI KISHOR										
32	GUPTA SHREYA RAVINDRA										
33	HEDAOO GAYATRI MANOJ										
34	IRGURALA VIDYA CHANDRAIAH										
35	JAISWAL SALONI SATISH										
36	JIBHEKAR SAMRUDDHI KISHOR										
37	KALAMBE SHREYA GUNWANT										

Shri Shivaji Education Society Amravati's
SSES Amt's Science College Nagpur
Certificate Course
Attendance for Certificate Course
"Physicochemical Study of Cement and its perspective"

Sr. No.	Name of Students	1	2	3	4	5	6	7	8	9	10
		Date & Theory/ Practical									
1	ALONE DEVYANI ANAND			p	p	p	-	p	p	p	p
2	ATRAM PRATIK JOGA	r	p	p		p			p		p
3	ATRAM UNNATTI SHASHIKANT	p	p			p		r		p	
4	AYYAGARI RENUKA SUDHAKAR	p		p							
5	BAGHEL SONAM SANTOSHKUMAR	.		p		p	p		p		p
6	BAIG TASMIYA HAMID	p		p	f	r	p			p	p
7	BANTE SHRADDHA GUDDU		p		f				p		p
8	BARSAGADE KALASH SUDHAKAR	p		r		p					
9	BAWANKULE LAXMI DEVIDAS	p	p	p	f		r		p		p
10	BEHAR KHUSHI RAJU			p		p	p		p		p
11	BHAISARE CHETANA DINESH	.				p	p	p		p	
12	BHASMOTE ARADHANA RAJENDRA	.	p	p					p		p
13	BHIMTE SHRIYA SURENDRAKUMAR	p,			f	p	p				p
14	BORKAR SEJAL RAJESH	p	p		p	p	p	r			
15	CHANNE TANISHKA PRAVEEN					p			p	p	
16	CHAPKE MOHINI SHANKAR						p				
17	CHAUDHARY AYUSH SHRICHAND									p	p
18	CHIKRAM VAIDAVI ARVIND		p			p	p	p			p
19	CHOUDHARY VAISHNAVI CHANDRAKAN			p		f	r		p	r	
20	DATIR PRANJALI ANKALESH	p	p		f	p		p			p
21	DESHMUKH JANHAVI VIRENDRA	r			f	r		p	p	p	.
22	DHANDE PRABUDHA PRADIP										
23	DHOK SOKSHAM NISHANT		p		p		p	r		p	
24	FULKUWAR PRIYA SANTOSH		p			p			p	p	p
25	GAJBHIYE SWEJAL PRASHANT	p				p	p	p		p	
26	GAJBHIYE TANISHA VISHWAJIT	.	p						f		
27	GANVIR ANUSHKA ANIL						p		p		
28	GHATURLE GRISHMA VINOD				r	p	p	p			
29	GONNADE MADHURIMA SHAILESH			r	f				p	r	
30	GOSWAMI DIVYA VIKAS	p						p		r	=>
31	GOSWAMI LAXMI KISHOR		p					p	p		p
32	GUPTA SHREYA RAVINDRA		p								
33	HEDAOO GAYATRI MANOJ	r?					p	p	r		p
34	IRGURALA VIDYA CHANDRAIAH	p									f
35	JAISWAL SALONI SATISH		p	r		p		p	-p	p	-
36	JIBHEKAR SAMRUDDHI KISHOR	.	r			p					p
37	KALAMBE SHREYA GUNWANT	p	f	p		f					

38	KALE AVANI PREMDAS	.	p	p		p	0	p	p		o
39	KALE MRUNALI CHANDRAJEET	p	p	.	p	p		p	f		(?
40	KASEKAR EKTA SANJAY	p	.	p	p		(?	p		.	I'
41	KHADSE CHETANA MORESHWAR	p	.	0	p	p		.	f		(J
42	KHAIRE UDAY PRAKASH	p	p		p	p		¶	p		0
43	KHAN INJILANADIM	p	p	p	.		(/	H	?	.	(/
44	KOLHE HARSHINI ARVIND	p	p	p	p	.	¶	H	?	.	
45	KUBADE TEJASWI MOTIRAM	p		p	p	p	p	(7	p	2	p, p
46	LONDE HARSHADA RAJESH	p	.	p	p	0		p	.		f'
47	MADAN DAKSHITA SANJAY			p	p		p	p		(?	
48	MAHAJAN BHUMI SUDHAKAR	J?	p	.	p	p		tj'			p
49	MANAPURE TANUSHREE ROHIT	J?	p	.	p	p		tj'			p
		J?	p	.	p	p		tj'			p
SO	MANSURE SANYUKTA SANJAY	0	.	r,	0	0		f	0	.	'P
51	MOHADIKAR SHRUTI PURUSHOTTAM	f	f	.	E'	0		p	0	.	0
52	MOHOD SAMRUDDHI SATISH	I	f	p		{J		fJ	12	p	p
53	MUDE DIVYA SUDHAKAR	J?	p		f'	0		p	f		¶
54	NAHATE ASHWINI RAVI	r,	-	p	f	(	tl	p	(J	p	p
55	PARIHAR SHREYA SUSHILSINGH	.	.			.	p	f	.	p	
56	PATHADE MRUDULA PRAVIN	p	¶		0	f		p	0		p
57	PHAD ANURADHA RAJABHAU	¶	f	f	p	p		p'	0		¶
58	PUSADKAR ANNADA VIVEK	J	.	0	p	p	.	(/	p		0
59	RAGIT SAMPADA RAVICHANDRA	J	.	t?	p	.		0	(7		p
60	RAHANGDALE PRERNA RUPCHAND	p	f	p	.	p	12	(7	p	¶	
61	RAHATE KHUSHI BHUMIRAJ	f	(J		f	p			¶		t?
62	RAJPUROHIT KALYANI GIRISH	(/	f	p	p	0		p	p	.	0
63	RAMTEKE ROHANSHI SHESHRAJ	.				.		f		p	...
64	RATHOD SHALINI ANIL		.		.	I'	{/	/J	¶	f	0
65	RAUT HIMANSHI SUNIL	12	.	p	p	tJ	.	p	.	p	
66	RAUT MOHINI VINOD	p	.	0	p	(1		p	p	.	¶
67	RAUT RIYA TRILOKCHAND	.	p	.	p	p		p	p	R	
68	RAUT SANIKA VILAS	.	p	.	p	p		p	p	R	
69	RAUT SRUSHTI BHIMRAO	0	¶	p	f	0	.	p	p	.	p
		.	.	¶		p	f		p	¶	p
70	SAHARE JANVI RAJU	p			0	p		p	f	I'	.
71	SAMRIT SMITA ARVIND	0		f	¶	f'	.	0	p	.	
72	SARODEPRACHIDHARMENDRA	-		f	¶		p	.	(	.	p
73	SATHAWANE MRUNMAYEE PRAMOD	¶	¶	/J	¶	¶	.	I	I'	f	¶
74	SHARMA RASHI SANDEEP	.	p	7	.	.	0	p	.	.	¶
75	SHEIKH SHAHINA AKIL	p	.	p	p	0		(J	f		p
76	SHENDE BHAGYSHREE VILAS		.	f	f	7		r	p		
77	SHENDE MRUDUL RAHUL	p	...	(J	f		p		"	.	p
78	SHENDESHRAVANIRAMESH	p	.	p	p	0		p	I	p	
79	SHINDE AKANSHA VIJAY	p		p	f	f	.	f	p	p	
80	SHRIRAMEFALGUNI SANDIP	.	p	p	p	0	-	J?	p	p	
81	SHUKLA VAISHNAVI SANJAY	p	.	¶	p	0	p	.	f	p	
82	SINGH SHIPRA PAWAN	;	p		p	.	.		12	J?	
83	THAKARE KADAMBARI SANJAY	p	.	ff>		(	(		.	0	p
84	TIDKE VAIBHAV WAMAN	.	¶	.		0		.	.	.	
85	UPASE VAIDEHI MANOHAR	p	.	p	p	p	.	A			f
										.	
86	WARHEKAR TWINKLEGOKUL	I'	p	p	p		¶		f	p	

Dr. K. H. Kar

Assistant Professor
Department of Chemistry
Shri Shivaji Science College,
Congress Nagar,
NAGPUR-440012.

SSES Amt's SCIENCE COLLEGE
Congress Nagar, Nagpur-12

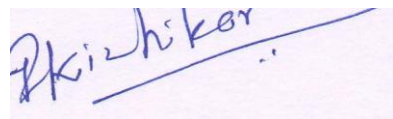
Notice

Date: 26/02/2024

All the students are hereby informed that, your Theory and practical Examination of Certificate course "Physicochemical Study of Cement and its perspective" **will be commencing from 15/03/24 & 16/03/2024 respectively. All the students are informed to remain present for the examination.**

Venue: Class Room C10

Time: 4.00 pm to 6.00 pm



Course Coordinator

Dr.V.R.Kinhikar

**Assistant Professor
Department of Chemistry
Shri Shivaji Science College
Congress Nagar,
NAGPUR-440012.**

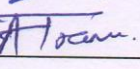
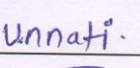
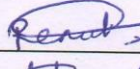
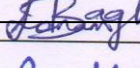
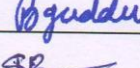
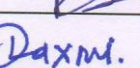
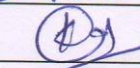
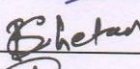
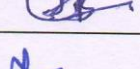
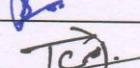
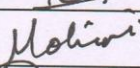
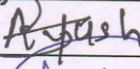
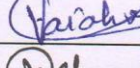
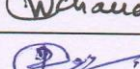
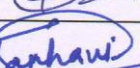
SSES Amt's SCIENCE COLLEGE
Congress Nagar, Nagpur-12

Session 2023-24

Name of Course "Physicochemical Study of Cement and its perspective"

Examination Attendance Sheet

Date:15/03/2024

Sr. No.	Roll No..	Name of Students	Sign. of Student	Sign of Invigilator
	C-1	ALONEDEVYANIANAND		
2	C-2	ATRAM PRATIK JOGA		
3	C-3	ATRAM UNNATI SHASHIKANT		
4	C-4	AYYAGARIRENUKASUDHAKAR		
5	C-5	BAGHEL SONAM SANTOSHKUMAR		
6	C-6	BAIG TASMIYA HAMID		
7	C-7	BANTE SHRADDHA GUDDU		
8	C-8	BARSAGADEKALASHSUDHAKAR		
9	C-9	BAWANKULE LAXMI DEVIDAS		
10	C-10	BEHAR KHUSHI RAJU		
11	C-11	BHAISARE CHETANA DINESH		
12	C-12	BHASMOTE ARADHANA RAIENDRA		
13	C-13	BHIMTE SHRIYA SURENDRAKUMAR		
14	C-14	BORKAR SEJAL RAIESH		
15	C-15	CHANNE TANISHKA PRAVEEN		
16	C-16	CHAPKE MOHINI SHANKAR		
17	C-17	CHAUDHARYAYUSHSHRICHAND		
18	C-18	CHIKRAM VAIDAVI ARVIND		
19	C-19	CHOUDHARY VAISHNAVI CHANDRAKANT		
20	C-20	DATIR PRANJALI ANKALESH		
21	C-21	DESHMUKH JANHAVI VIRENDRA		
22	C-22	DHANDE PRABUDHA PRADIP		

23	C-23	DHOK SOKSHAM NISHANT	Nisha	8
24	C-24	FULKUWAR PRIYA SANTOSH		@/
25	C-25	GAJBHIYE SWEJAL PRASHANT	fY	
26	C-26	GAJBHIYE TANISHA VISHWAJIT	f-r	
27	C-27	GANVIR ANUSHKA ANIL	-	(V
28	C-28	GHATURLE GRJSHMA VINOD		q1/
29	C-29	GONNADE MADHURIMA SHAILESH	L f,-,J,-	&/
30	C-30	GOSWAMI DIVYA VIKAS	'J)N -	
31	C-31	GOSWAMI LAXMI KISHOR	fα "0	
32	C-32	GUPTA SHREYA RAVINDRA	'...lt--	
33	C-33	HEDAOO GAYATRI MANOJ	I "sa"tGbD' -	:g/
34	C-34	IRGURALA VIDYA CHANDRAJAH	(" " .	CV
35	C-35	JAISWAL SALONI SATISH		(1_ /
36	C-36	JIBHEKAR SAMRUDDHI KISHOR	2>-	(:£/
37	C-37	KALAMBE SHREYA GUNWANT	(i) ---	£/
38	C-38	KALE AVANI PREMDAS	)Jrc-i. _	/t)/
39	C-39	KALE MRUNALI CHANDRAJEET	nf)-)_	
40	C-40	KASEKAR EKTA SANJAY	-	
41	C-41	KHADSE CHETANA MORESHWAR	C:.,	
42	C-42	KHAIRE UDAY PRAKASH	LII. _,:,,W_	{y
43	C-43	KHAN INJILA NADIM	0Z:111..	
44	C-44	KOLHE HARSHINI ARVIND		
45	C-45	KUBADE TEJASWI MOTIRAM	ft1·t>4·	(£_--
46	C-46	LONDE HARSHADA RAJESH	QlswzkA. -	
47	C-47	MADAN DAKSHITA SANJAY		(?,,
48	C-48	MAHAJAN BHUMI SUDHAKAR	oi. _	
49	C-49	MANAPURE TANUSHREE ROHIT	,-,) --	
50	C-50	MANSURE SANYUKTA SANJAY		
51	C-51	MOHADIKAR SHRUTI PURUSHOTTAM	O	
52	C-52	MOHOD SAMRUDDHI SATISH	f) d..μ	

53	C-53	MUDEDIVYASUDHAKAR	f)	er
54	C-54	NAHATE ASHWINI RAVI	(1iΩ f	
55	C-55	PARIHAR SHREYA SUSHILSINGH	J0 =	
56	C-56	PATHADE MRUDULA PRAVIN		(6/
57	C-57	PHAD ANURADHA RAJABHAU		IF,./
58	C-58	PUSADKAR ANNADA VIVEK	<u>(.u.:J</u>	
59	C-59	RAGIT SAMPADA RAVICHANDRA		
60	C-60	RAHANGDALE PRERNA RUPCHAND	fll	
61	C-61	RAHATEKHUSHIBHUMIRAJ	l! q .	W
62	C-62	RAJPUROHIT KALYAN! GIRISH	(b;fll,.	@/
63	C-63	RAMTEKE ROHANSHI SHESHRAJ	<f -, -, AJs,t	(!!)/
64	C-64	RATHOD SHALINI ANIL	.	
65	C-65	RAUT HIMANSHI SUNIL	t .	
66	C-66	RAUT MOHINI VINOD		
67	C-67	RAUT RIYA TRILOKCHAND		(\$/
68	C-68	RAUT SANIKA VILAS	-	CY
69	C-69	RAUTSRUSHTIBHIMRAO	(_ _ ,,"	
70	C-70	SAHARE JANVI RAJU	<Cf;	
71	C-71	SAMRIT SMITA ARVIND	c ,)	&x'
72	C-72	SARODEPRACHIDHARMENDRA		
73	C-73	SATHAWANE MRUNMAYEE PRAMOD		
74	C-74	SHARMA RASH! SANDEEP	CP	
75	C-75	SHEIKH SHAHINA AK.IL		
76	C-76	SHENDE BHAGYSHREE VILAS	{Ji) --	(\$/
77	C-77	SHENDE MRUDUL RAHUL	m up 0t...	
78	C-78	SHENDESHRAVANIRAMESH		
79	C-79	SHINDE AKANSHA VIJAY		
80	C-80	SHRIRAME FALGUNI SANDIP	<u>Ja1 ,J.l</u>	CY'
81	C-81	SHUKLA VAISHNAVI SANJAY		
82	C-82	SINGH SHIPRA PAWAN		

83	C-83	THAKAREKAD AMBARI SANJAY	Badambori	
84	C-84	TIDKE VAIBHAV WAMAN	cute.,	
85	C-85	UPASE VAIDEHI MANOHAR	10-ep.	
86	C-86	WARHILKAR TWINKLE GOKUL	e	

Name of Invigilator:
 Mr. Sandip v. Dautpue
 15/3/2024

V.R. Kinikar

Course Coordinator

Dr.V.R.Kinhikar

Assistant Fl
 Departmento rotesor
 Shri ShivajiS .f Chemistry
 Congre;,,eNnce College,
 agar
 NAGPUR-440012:

Shri Shivaji Education Society Amravati's

Science College Congress Nagar Nagpur

Academic session 2023-24

Examination -Certificate Course

"Physicochemical Study of Cement and its perspective"

Time: 2 hrs

Maximum Marks :80

Roll No. C..- b g

Marks Obtained:

CTz:J A

Signature of Invigilator

Instruction:

- All Questions are compulsory(Total 40 questions)
- Tick() on correct answer
- Explain the answer in two line
- Each question carrying 2 mark (1mark for correct answer and 1 mark for explanation)

Que 1: What is cement primarily used for?

- a) Construction
- vb) Decoration
- c) Lubrication
- d) Insulation

O {)/ 14 f ---01,j . -- -}or
--f!.ae ..d) -1.Uch r-cl po"tf ckn eaN-1: a
? J .

Ques. 2: Following are the types of Cemnt

- a) White Cement
- b) Grey Cement

Qucs. 2: Following are the types of Cement

- a) White Cement
- b) Grey Cement
- c) All of these
- d) Pozzolana cement



Answer: Explanation: Id,ov e.. f:jf e4 erf- ceu\11 t a-1 r:
L>1Md...d c-lilY LJ.M.u-@.:7V\. MJCAJa.L

Que 3: Which raw material is a primary component of cement production?

- a) Sand
- b) Water
- c) 1,,-f it'tay
- d) Plastic

Answer: Explanation: cCVVJ<YLi:- f?-od.cull ..!: !&/ c, 7:;:;+±

alumina, iron oxide required for cement chemical composition,

Quc.4: The process of grinding clinker, gypsum, and other materials to produce cement is called:

hydration b) Calcination

(,I'v c) Clinkering

d) Blending

Answer: Explanation: f(e:dd tj= d-1/I d' L) μJ_e>i_z n1AM.NI
OU^d o±hC'A, M Jou :..IA e H-1-d.Aoh .

Que.5: The process of cement hydration involves:

a) Drying of cement

ft b) Mixing with water to form a paste

c) Evaporation of water

yd d) Freezing of cement

Answer: Explanation: &:M e.d fyd.ti a.lim ...<A ft. ..c..).eLJ...../'cSL
J< t'k-21 "1/3 1i...j O A A-l-Ph G0 C <CY1c:cJ q.s..l
ch2Q.LIA , /:C J'VK f'o'-J:i ...ah t'c:4 eve'AfuaL'? **M+t-d**

Que.6 : What is the main role of gypsum in cement production?

a) Color enhancement

celerating b) Accelerating setting time

'-IVC c) Retarding setting time
 d) Improving early strength

Answer: Explanation: J--U.M -'-' .,:uld,...I k c em01J h? eo-vJ::t.
:ti, Ae c km e, cltCl j f re:-irg.J- t'-'--1 rd A e::tz.:!.

Que. 7: The main chemical compound responsible for cement's strength is:

a) Calcium carbonate

b) Silica

u c) Alumina

d) Tricalcium silicate

Answer: Explanation: 4i)1 C-t-v .i: H, e M c o-v2&J--
tlft

Que. 8 : Which type of cement is suitable for use in marine structures?

- a) Ordinary Portland Cement (OPC)
- b) Rapid Hardening Cement

ulphate Resistant Cement

- ☒ d) White Cement

Answer: Explanation: Su.J..fh.J:e l¢::1,1i,Ja,,, t:C/1£ 41e.c/2fi
cAe4-/?tz..t Q,+o R.LJJ d ..du effuh cf- d.ut/'1 .Ji a ff cul
M .JI 4-! =li .J-- ,J,LL- # M e?O/U'1P arid 4-u.if b.Jz ...i.fc/4.
er, --

Que.9: Which type of cement is produced by adding pozzolanic materials?

- a) Rapid Hardening Cement

Portland Pozzolana Cement (PPC)

- ☒ 1,5J White Cement

Answer: Explanation: f6PLL1on d f.p.53 a..« e.uvk/11-...u p-o
-L lo.u. J.u,ic, JJJ-h-III,4, Me -f-:;...t, 4-i, //c,v

(D r<_)

Que.9: The initial setting time of cement refers to:

- (☐ a) The time it takes to mix cement with water
- ☒ b) The time it takes for the cement paste to harden completely
- c) The time it takes for the cement paste to partially harden
- d) The time it takes for cement clinker to form

Answer: Explanation: "1tMe 1 the Move....

Que.10 : Which type of cement is used to reduce the heat generated during hydration?

a) High Alumina Cement

Yow Heat Cement

(?) Quick-setting Cement

0 Y d) Blended Cement

Answer: Explanation:

1-leJ Ce/VleL'kf IA 4/.kU J 1-o B ea,lur--0
'-rt, e He a.f Ve_L<V> alJ.A dl .11 μ.T Jd,L d.D e--U A J t-0
...LL j,...id,y .1A <q -L C / ...1/v-4 f ,N) M .zd,dA'1.rec '...dv'.) CA efl
.&tru---durc-.s h; tr .otPc.k.J

Que.11 : The compound responsible for the gray color of cement is:

a) Calcium oxide

j) Won oxide

. () c) j\luminum oxide

o- Magnesium oxide

Answer: Explanation: 1h?Y? 17'?f1'd e ,... , oA4--fNLL.d,le fo-1 Hv- J
ca-Yl& C<:.N!(;'/lf

Que.12 : Which type of cement is used in artistic and decorative applications?

1) Rapid Hardening Cement

I; ""6) Blended Cement

c) White Cement

rtland Pozzolana Cement (PPC)

Answer: Explanati on: i.u.d.i.I h:: f r9!>£.l a.cvl JPJJ,e.Lrrtt,..... eeV?00J-
:M ...t,II g.J.. f(r b'c @) d ale r,;...::(j 12-f rPcczbqu
_____ .fo ..d b;rCj111=

Que.13 : The standard consistency of cement paste is determined by the:

- a) Vicat apparatus
- b) Le Chatelier apparatus
- c) Autoclave
- d) Compaction test

Answer: Explanation: The standard consistency of cement paste is determined by the Vicat apparatus. It is the depth of penetration of the Vicat plunger into the cement paste at a standard consistency. The standard consistency is defined as the consistency of the cement paste in which the Vicat plunger penetrates to a depth of 10 mm in the cement paste.

Que.14: Which type of cement is produced by grinding clinker with a small amount of gypsum?

- a) Rapid Hardening Cement
- b) Low Heat Cement

Ordinary Portland Cement (OPC)



- d) Sulphate Resistant Cement

Answer: Explanation: Ordinary Portland Cement (OPC) is produced by grinding clinker with a small amount of gypsum.

£7" , , l : : ; a = : ± 1 ?

Que.15: The property of cement that allows it to maintain its volume after setting is called:

- a) Workability
- b) Plasticity
- c) Shrinkage

0??
togenous healing

Answer: Explanation: ftob901<'04-<4 Meak/1 .1.J tfM.- /212:f&i l;/ i-
le-N'Jef'-/: all#<k<-4 ,J: ,b JJd ,(--=IJf. a.c,J Ma.u2 f?::d/2
v1.LL* ..:od---uMc CEfc:/1....; r ...u...l.v"cb ::r::v. Hd.f c'--J. Le_e s-tVLcx-l,,L.

Que.16: Which type of cement is used in cold weather conditions due to its ability to set quickly?

a) Portland Pozzolana Cement (PPC)

01 Jar(fuick-setting Cement

c) Low Heat Cement

d) Rapid Hardening Cement

Answer: Explanation: !J1:u'c-1< .5'c:C£4! Cc/VICY\L .L.1 -<A.r<ol cAfi
17<.t2 CA c... a.i/l ol.I1-tgAA be.-ea-<Ld e :1e4: Or u.f
4 L.I.p..i. c 41&J tJ-t.-c.k 0/1 dY /2-&C<-L d ...o /4o<e<-? f-

Que.17: The primary chemical compounds in cement responsible for its strength are:

3S and C2S

\)Obf c3A and C4AF

c) C2S and C3A

d) C4AF and C2S

Answer: Explanation: IX/1(/r:a117' <:-4 e:cv...A.c.-.u" t.,/Y'-f,{U4/I#
/2. fa1 t:: (ELV1UV: ' ≤fhCLJ a4c: il {C--aLO't<..Λ.A-
w..l /r 12r -ci.O g S.:i and t>--1'c-4/0½ H/ f1..Uea / (C2J:)'

Que.18: What is the effect of an increased percentage of C3A in cement?

- a) Increased early strength
- b) Reduced heat generation

D ➤ Improved workability

reased susceptibility to sulfate attack

Answer: Explanation: A uL?a,ea,1ed Jed ; eY c...J 4 u-%?
c...4(l(l e.d (Vla...): e6 Jl: M..4d c: d rAdj e.cb't1 e .6? d<d./h M-L
q<.d:q d., lea ,d.u,f & 'O' e.Lu & d e..i.OA d l..4 0'Ol

Que.19: Which type of cement is used in high-temperature applications like foundries and furnace linings?

va) High Alumina Cement

OYb) Quick-setting Cement



c) Low Heat Cement

d) Portland Pozzolana Cement (PPC)

Answer: Explanation: tu CL!.-uavza C-e-vz C:.....-j- ...iE --<eU e .r:rL...o
H/ : 4.f .Lfr-nb""aiLJd 491,u; e lo .l1-1 eoc.ccllo--J-
.lt.e..1..-c'.d co...2C..e. .t.=. He ca /: cu d -fc). t-

Que.20:. Which test is used to determine the soundness of cement?



t)y

a) Vicat test

Chatelier test

c) Setting time test

d) Fineness test

Answer: Explanation: 11ci e L c: c,ha/;...t /f! ?z. htd= <-j ...<.,Udo/f-1?
tJer &t11 e S'q,u-4 d.1!f-d.1 4 c --r bu dlcA ALJdjecJ-e.
:AJ:s. .h.1d/fy. b2 liced lr 1: yoh. 1112 e et tJ -

Que.21: Which type of cement is used to prevent corrosion of steel reinforcement in concrete structures?

ol/

D phosphate Resistant Cement

b) Blended Cement

c) Portland Pozzolana Cement (PPC)

d) Ordinary Portland Cement (OPC)

Answer: Explanation: lu)..f b,J<!!. A Yd h.-£JR C41t1cet.-l: vi.a L&t e: r/
1:1? 17 e..ve...V::: efl?LAQ1.Jov'J fre.t.L 8,e/c,-fo-1 CPJi/1CD L: ...t.-0
C<?/// e&d:e., 6 fin-<--ch.1CCA - 3/4ft:RA--1d b. 4-ud:f A.rd:. a -chv

Que.22: What is the minimum percentage of calcium sulfate (gypsum) that is added to cement during production?

a) 1%

b) 2%

c) 3%

d) 5%

Answer: Explanation: Typically around 2-1% of calcium sulphate is added to cement during production to control its setting time.

Que.23: . Which type of cement is used in the construction of dams and large hydraulic structures?

Heat Cement

• b) Rapid Hardening Cement

c) Sulphate Resistant Cement

nd). __, Blended Cement

JV

Answer: Explanation: _____ fleJ f'LD/1.cwJ: LI 1Lid al u<.o .Hu
v/?Y0t') <.A..CM_cxv1 4P1/VIA aAal ./a..A'/(3 HdolJ. a oL/c. --- !
±v WWWV'o..£ ftie: ti 1dl<:Vu-..../ 3/4 ct./I
'J're,vc.,lf-

Que.24: The fineness of cement is determined by:

a) Vicat apparatus

b) Le Chatelier apparatus

 air permeability test



d) Compaction test



Answer: Explanation: 7be-- +i.,elZ 4 of= Lc:::&1en-L::: .../1 .../e-C c..S;
/6J .p...cv q1a:/o e a <A. 1el) LY7f« k t'h ?/ 4--/ f 'U e,i
11/1 t"..<z.vS '<.<IC--6 fIAk !1--j?ecJft'c C:e

Que.25: Which type of cement is produced by intergrinding or blending clinker with pozzolanic materials or granulated slag?

v,Kapid Hardening Cement

b) Portland Pozzolana Cement (PPC)



c) Sulphate Resistant Cement

d) Low Heat Cement

(JO

Answer: Explanation: rapidly hardened type of cement used for decorative purposes and architectural finishes

M: 1141e.L<.o? e.-4 if C.M.A f053 &>...l.A ...C ...hM 4
7.C... μ... re <-1, m4 -e- c&,A,1/2 4

Que.26: . Which type of cement is used for decorative purposes and architectural finishes?

a) Rapid Hardening Cement

b) Sulphate Resistant Cement

s}Wiiife Cement



d) Blended Cement

Dswer: Explanation: =- e c.e WY'.l..... ...-..... l..... ...-A=/44-< cd =ftvA- ---

..J(C->Y--a CVG p u A.f c4. l' a.14 o.4 a.k.1 h:..e/T.u/a..l -fw.i3/4 e-1

b ..«kt c1e4 tl eI/ 6 4--if (aA L GM J d .-</i f-n td? 0

Que.27: What is the effect of adding too much water during cement mixing?

a) Increased strength

duced workability

c) Faster setting time



d) Reduced durability

Answer: Explanation: ftdd,<.oO foa C>AfA-e-4 U? L/1/'

(r)
J)/ -e/1/Jed 'M-?CI & P4,L vt:A H.e. 1,LI.Ra'r'k04,/4' 7f 91'-.ftvt -
.vt)X }-U\ e a.;<" C'c:U'I JJ eJJ7// L".t:% th,L -f/4
-dtr ! J-1,v .,;_.,,o rj- rl e.,y,CA.,de

Que.28: Which type of cement gains strength more slowly than Ordinary Portland Cement (OPC)?

a) Rapid Hardening Cement

Heat Cement

c) Sulphate Resistant Cement

d) Quick-setting Cement

Answer: Explanation: t_{a<..J} /<ilfl J-- c ,eLV1<Li ,e ,& A.i:h A

0 \ ¥ 1V..P-""\..E.- <jk <-2 Lt ff. a4C' O ,fC:., M ""k-MJ! J A u,i & I .e.
Nlt-'ti1 c.zv.1CA em Jb-u cL:u ve< I_h: #UUL?f- c&.,:-,7 oU,(.,(1-C,
HeJJ- .

Que.29 : The heat of hydration in cement is released during:

a) Mixing

etting

c) Curing

d) Drying

Answer: Explanation: rAe. Hea .t: Pj ,H:f_{ol.t}<4M LL2 Ge.N2 C:rt/-

...q f dea4ed GL11.A,c,? kh<::: A Ce4.I &?,
d,-, e.-.J C..a L A,f ac thzv,1 bVC..OE<<.C, c.I WYICr1 r
0 c, V'v .,

Que.30: Which type of cement is used for making precast elements and high-strength concrete?

a) Portland Pozzolana Cement (PPC)

b) Blended Cement

pid Hardening Cement

d) Sulphate Resistant Cement



Answer: Explanation: the compressive strength of cement is determined by the Vicat test.

the compressive strength of cement is determined by the Vicat test.

Que.31: Which test is used to determine the compressive strength of cement?

a) Vicat test



b) Le Chatelier test

c) Setting time test

mpression test

Answer: Explanation: the compressive strength of cement is determined by the Vicat test.

the compressive strength of cement is determined by the Vicat test.

Que.32: Which compound in cement contributes to its high early strength development?

Tricalcium silicate (C3S)



b) Dicalcium silicate (C2S)

c) Tricalcium aluminate (C3A)

Answer: Explanation: Trrtu.vluu.ro .IM..Lfh (5;-0 J,J tt...L ctr&-/

Answer: Explanation: *Ju.lfh..ali:* *B- t:ULI=* *eUlo e:.0.J-.dA* *P.k?*

Answer: Explanation: fhe, 4-u:nze,}g ve l:etL N1 e,aA1,u1, e-1 tt e

$$CV_{\dots, \{ _ \}} \quad ; \dots$$

Que.35: Which type of cement is used in the construction of water-retaining structures and sewage systems?

hate Resistant Cement

- b). Blended Cement
- c) Rapid Hardening Cement
- d) Portland Pozzolana Cement (PPC)

Answer: Explanation: /.Jaj./h ...h A.<'d.Ub,LIL Coi/I m Jr- -l. ...LA--U 4
1/4 Loi/d> trc.-Le:1/PVJ w ,vCi/4.: f.. J.g..Jv f...kua::
S ..205/ e SJJ v.&1 t-o A <:(J.fd): 1ji--< gHced: ..l
44Ade tJAolz..J

Que.36: Which type of cement has a lower heat of hydration compared to Ordinary Portland Cement (OPC)?

- a) Rapid Hardening Cement
- w Heat Cement
- c) Quick-setting Cement
- d) Sulphate Resistant Cement

Answer: Explanation: He J CdVJU1...)- H.a..1 L.L?<?H y.A.-L-
1/a/= /6J C-U'l a ff AA ,4&-f m..lc r:J f-o a.Af'' f M.t-/a ..C/
f <1-) 1V1.af/.tiJ- .).t "u/& J1 e NI .O<UAV
J A-(CX:::U. VE' J

Que.37: The primary compound responsible for the setting of cement is:

alcium silicate (C3S)

- b) Dicalcium silicate (C2S)
- c) Tricalcium aluminate (C3A)
- d) Tetracalcium aluminoferrite (C4AF)

Answer: Explanation: L?kfpq fee,(u,,Lv1 t-F// ..t..'.1
rr-m0dY-/- tfk4 L1 d ¼ f P'V'J-/l fe -lfrn th. i..r./...J.
c.e1Uir1./ r2i C&M'r'ILL ..LL6 ..112 Ktjo&iAhM

Que.38: What is the role of fineness in cement?

- a) To enhance color
- b) To control setting time
- c) To increase strength
- d) To reduce workability



DA **Answer: Explanation:** _____

Que.39: Which type of cement is used for mass concrete structures like dams and foundations?

- a) Rapid Hardening Cement
- b) Heat Cement
- c) Quick-setting Cement
- d) Portland Pozzolana Cement (PPC)



fYl qA4 C A'Y'l CA el=c. d / ½1 ch A Cd f--p Pr-eA!C'4.): -e X u>l/4AV-G,

Que.40: . Which test measures the expansion of cement due to unsoundness?

d) Autoclave test

<2tf o<tf4:a... ti CC/M 4.-tLL b Lkfl -f ell

d.uJ. f e oZiU 0/ fr. V <P-h.1N' -e ..&6.-&1 e.4.

Pinkkar

Dr.V.R.I<inhikar

Assistant Professor
Department of Chemistry
Shri Shivaji Science College
Congress Nag •r, '
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Shri Shivaji Education Society Amravati's

Science College Congress Nagar Nagpur

Academic session 2023-24

Certificate Course Examination

Course name: "Physicochemical Study of Cement and its perspective"

Time :60 minutes

[Max. marks :20]

Practical Examination Slip

1. Physical analysis of Limestone.
2. Determination of calcium carbonate and magnesium carbonate of Limestone.
3. Determination of Soundness test
4. Determination of Consistency Test

Viva-Voce

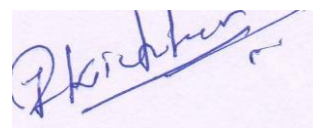
Que: 1 Which type of cement has a higher percentage of alumina and iron oxide?

Que: 2 Explain: High Alumina Cement has a higher percentage of alumina and iron oxide, giving it superior heat resistance properties.

Que:3 By which factor the initial setting time of cement is affected ?

Que:4 Which type of cement is used in decorative concrete flooring and terrazzo finishes?

Que:5 Which type of cement is used for repairing structures due to its rapid setting characteristics?



Assistant Professor
Department of Chemistry
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Congress Nagar, Nagpur-440012.

SSES Amt's SCIENCE COLLEGE
Congress Nagar, Nagpur-12

Session 2023-24

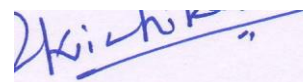
Name of Course "Physicochemical Study of Cement and its perspective"

Mark list

Sr. No.	Roll No.	Name of Students	Theory	Practical	Total	Grade
1	C-1	ALONE DEVYANI ANAND	55	15	70	A
2	C-2	ATRAM PRATIK JOGA	34	12	46	C
3	C-3	ATRAM UNNATTI SHASHIKANT	51	17	68	B+
4	C-4	AYYAGARI RENUKA SUDHAKAR	38	16	54	B
5	C-5	BAGHEL SONAM SANTOSHKUMAR	45	17	62	B+
6	C-6	BAIG TASMIYA HAMID	60	17	77	A
7	C-7	BANTE SHRADDHA GUDDU	67	18	85	A+
8	C-8	BARSAGADE KALASH SUDHAKAR	61	15	76	A
9	C-9	BAWANKULE LAXMI DEVIDAS	52	16	68	B+
10	C-10	BEHAR KHUSHI RAJU	40	15	55	B
11	C-11	BHAISARE CHETANA DINESH	77	14	91	O
12	C-12	BHASMOTE ARADHANA RAJENDRA	51	17	68	B+
13	C-13	BHIMTE SHRIYA SURENDRAKUMAR	41	13	54	B
14	C-14	BORKAR SEJAL RAJESH	72	20	92	O
15	C-15	CHANNE TANISHKA PRAVEEN	48	16	64	B+
16	C-16	CHAPKE MOHINI SHANKAR	38	16	54	B
17	C-17	CHAUDHARY AYUSH SHRICHAND	45	17	62	B+
18	C-18	CHIKRAM VAIDAVI ARVIND	60	17	77	A
19	C-19	CHOUDHARY VAISHNAVI CHANDRAKANT	36	14	SO	B
20	C-20	DATIR PRANJALI ANKALESH	65	18	83	A+
21	C-21	DESHMUKH JANHAVI VIRENDRA	49	17	66	B+
22	C-22	DHANDEPRABUDHAPRADW	52	16	68	B+
23	C-23	DHOK SOKSHAM NISHANT	40	15	55	B
24	C-24	FULKUWAR PRIYA SANTOSH	77	14	91	O
25	C-25	GAJBHIYE SWEJAL PRASHANT	51	16	67	B+
26	C-26	GAJBHIYE TANISHA VISHWAJIT	47	15	62	B+
27	C-27	GANVIR ANUSHKA ANIL	32	16	48	C
28	C-28	GHATURLE GRISHMA VINOD	51	17	68	B+
29	C-29	GONNADE MADHURIMA SHAILESH	58	13	71	A

30	C-30	GOSWAMI DIVYA VIKAS	50	17	67	B+
31	C-31	GOSWAMI LAXMI KISHOR	48	16	64	B+
32	C-32	GUPTA SHREYA RAVINDRA	77	16	93	0
33	C-33	HEDAOO GAYATRI MANOJ	45	17	62	B+
34	C-34	IRGURALA VIDYA CHANDRAIAH	52	14	66	B+
35	C-35	JAISWAL SALONI SATISH	44	17	61	B+
36	C-36	JIBHEKAR SAMRUDDHI KISHOR	77	17	94	0
37	C-37	KALAMBE SHREYA GUNWANT	43	15	58	B
38	C-38	KALE AVANI PREMDAS	59	13	72	A
39	C-39	KALE MRUNALI CHANDRAJEET	55	17	72	A
40	C-40	KASEKAR EKTA SANJAY	49	16	65	B+
41	C-41	KHADSE CHETANA MORESHWAR	38	16	54	B
42	C-42	KHAIRE UDAY PRAKASH	45	17	62	B+
43	C-43	KHAN INJILA NADIM	39	14	53	B
44	C-44	KOLHE HARSHINI ARVIND	42	15	57	B
45	C-45	KUBADE TEJASWI MOTIRAM	62	19	81	A+
46	C-46	LONDE HARSHADA RAJESH	58	18	76	A
47	C-47	MADAN DAKSHITA SANJAY	49	16	65	B+
48	C-48	MAHAJAN BHUMI SUDHAKAR	42	15	57	B
49	C-49	MANAPURE TANUSHREE ROHIT	37	18	55	B
50	C-50	MANSURE SANYUKTA SANJAY	39	18	57	B
51	C-51	MOHADIKAR SHRUTI PURUSHOTTAM	45	16	61	B+
52	C-52	MOHOD SAMRUDDHI SATISH	41	15	56	B
53	C-53	MUDE DIVYA SUDHAKAR	62	19	81	A+
54	C-54	NAHATE ASHWINI RAVI	58	18	76	A
55	C-55	PARIHAR SHREYA SUSHILSINGH	49	16	65	B+
56	C-56	PATHADE MRUDULA PRAVIN	32	15	47	C
57	C-57	PHAD ANURADHA RAJABHAU	37	14	51	B
58	C-58	PUSADKAR ANNADA VIVEK	37	17	54	B
59	C-59	RAGIT SAMPADA RAVICHANDRA	55	18	73	A
60	C-60	RAHANGDALE PRERNA RUPCHAND	57	17	74	A
61	C-61	RAHATE KHUSHI BHUMIRAJ	55	17	72	A
62	C-62	RAJPUROHIT KALYANI GIRISH	32	15	47	C
63	C-63	RAMTEKE ROHANSHI SHESHRAJ	38	18	56	B
64	C-64	RATHOD SHALINI ANIL	39	18	57	B
65	C-65	RAUT HIMANSHI SUNIL	41	16	57	B
66	C-66	RAUT MOHINI VINOD	41	15	56	B
67	C-67	RAUT RIVA TRILOKCHAND	64	19	83	A+
68	C-68	RAUT SANIKA VILAS	59	18	77	A
69	C-69	RAUT SRUSHTI BHIMRAO	49	18	67	B+
70	C-70	SAHARE JANVI RAJU	41	18	59	B

71	C-71	SAMRIT SMITA ARVIND	37	17	54	B
72	C-72	SARODEPRACHIDHARMENDRA	55	18	73	A
73	C-73	SATHAWANE MRUNMAYEE PRAMOD	57	17	74	A
74	C-74	SHARMA RASHI SANDEEP	55	17	72	A
75	C-75	SHEIKH SHAHINA AKIL	32	15	47	C
76	C-76	SHENDE BHAGYSHREE VILAS	38	18	56	B
77	C-77	SHENDE MRUDUL RAHUL	40	18	58	B
78	C-78	SHENDE SHRAVANI RAMESH	44	16	60	B
79	C-79	SHINDE AKANSHA VIJAY	59	17	76	A
80	C-80	SHRIRAME FALGUNI SANDIP	59	19	78	A
81	C-81	SHUKLA VAISHNAVI SANJAY	53	18	71	A
82	C-82	SINGH SHIPRA PAWAN	49	16	65	B+
83	C-83	THAKARE KADAMBARI SANJAY	32	15	47	C
84	C-84	TIDKE VAIBHAV WAMAN	37	17	54	B
85	C-85	UPASE VAIDEHI MANOHAR	55	18	73	A
86	C-86	WARHEKAR TWINKLE GOKUL	56	17	73	A



Course Coordinator

Course Coordinator

Dr.V.R.Kinikar

Assistant Professor
Department of Chemistry
Shri Shivaji Science College,
Congress Nag.tr,
NAGPUR-440012.



Shri Shivaji Education Society Amravati's
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CERTIFICATE

Mr./Ku. Sanika V. Raut is awarded with certificate on successful completion of the course entitled, Certificate course in Physicochemical Study of Cement and its Perspective.

Session 2023-24 under Add-on course conducted for 30 hours from 15/12/2023 to 24/02/2024 by Department of Chemistry, SSES's, Science College, congress Nagar, Nagpur 440012.

He/She has passed the Examination with •A' Grade.

@

Dr. V. R. Kinhikar
Coordinator, Department of Chemistry

Prof. M. P. Dhore
Principal, Science College, Nar

Shri Shivaji Education Society Amravati's



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Action Taken Report:

SSSES Amt's Science College, Nagpur, department of Chemistry, organized a 30-hour skill development course titled "Physicochemical Analysis of Cement and Its Perspectives" from 15th December 2023 to 24th February 2024 held every Friday and Saturday, the course aimed to enhance students' understanding of cement's properties, applications, and analysis techniques. Total of 86 students participated, benefiting from theoretical lectures on cement composition and properties, alongside practical sessions providing hands-on experience in determining chemical composition, analyzing physical properties, and testing cement strength and hydration effects. Total 86 students benefitted the course.

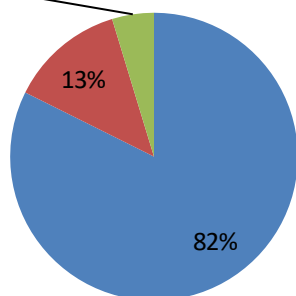
Feedback Analysis

- 1) No. of students Registered & Admitted for the Course: 86
- 2) No. of students Participate in Course and submitted the feedback : 85
- 3) Question wise Analysis of the Feedback:

Sr.No.	Questions	Response in Percent (%)		
1	How would you rate the overall quality of the Physicochemical analysis of cement?	Excellent	Good	Average
		82%	13%	5%
2	How well did the Physicochemical analysis of cement content meet your expectations	Exceeded expectations	Met expectations	Below expectations
		87%	11%	1%
3	How effective were the course instructors in delivering the Physicochemical analysis of cement?	Very effective	Effective	Ineffective
		76%	23%	1%
4	How likely are you to recommend the Physicochemical analysis of cement to others?	Very likely	Likely	Unlikely
		39%	12%	4%
5	How satisfied are you with the practical sessions of the Physicochemical analysis of cement?	Very satisfied	Satisfied	Dissatisfied
		82%	16%	2%

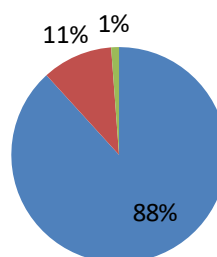
Que. 1 How would you rate the overall quality of the Physico

5% ■ A. Excellent

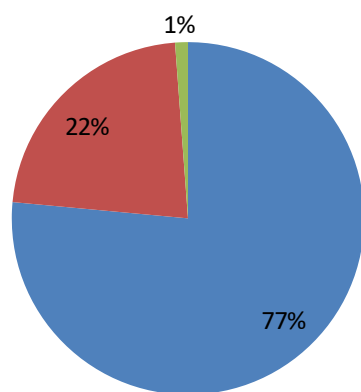


Que. 2 How well did the Physicochemical analysis of cemen

■ A. Exceeded expectations



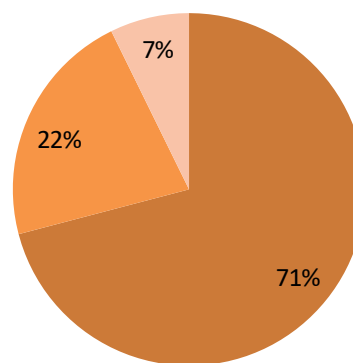
Que. 3 How effective were the course instructors in delivering the



■ A. Very effective

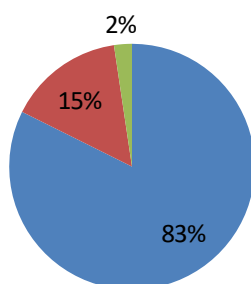
Que. 4 How likely are you to recommend the Physicochemisc

■ A. Very likely



Que.5 How satisfied are you with the practical sessions of the Physicochemical analysis of cement?

■ A. Very satisfied ■ B. Satisfied ■ C. Dissatisfied



Internal Quality Assurance Cell
(IQAC)
S. S. E. S. A. Science College
Congress Nagar, Nagpur.



Principal
S. S. E. S. Amravati's
Science College, Nagpur.