

# SRI BHARATHI

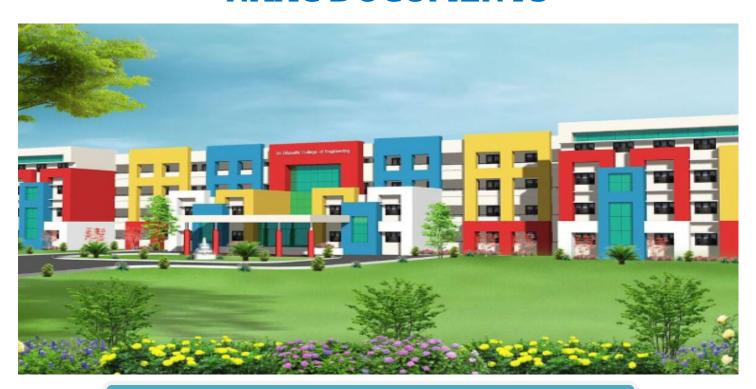
ENGINEERING COLLEGE FOR WOMEN

(Approved by AICTE, New Delhi and Affiliated to Anna University, Chennai)

Kaikkurichi, Pudukkottai -622 303

www.sbec.edu.in

# **NAAC DOCUMENTS**



Quality Indicator Frame Work

Criterion – 2

**Teaching-Learning and Evaluation** 

Submitted by

IQAC
Internal Quality Assurance Cell

Sri Bharathi Engineering College for Women

(Approved by AICTE, New Delhi and Affiliated to Anna University, Chennai-25) Kaikkurichi, Pudukkottai, Tamil Nadu – 622 303, India

Criteria 2 Teaching-Learning and Evaluation 350

**Key Indicator- 2.3. Teaching- Learning Process (40)** 

# 2019-2020 PARTICIPATIVE LEARNING CIVIL ENGINEERING

Activity	Number of Students attended	Page No.
Value Added Course (VAC)	54	3
TOTAL STUDENTS ATTENDED	54	-

(Approved by AICTE, New Delhi and Affiliated to Anna University, Chennai-25) Kaikkurichi, Pudukkottai, Tamil Nadu – 622 303, India

Criteria 2

**Teaching-Learning and Evaluation** 

350

**Key Indicator- 2.3. Teaching- Learning Process (40)** 

2019-2020
CIVIL ENGINEERING
PARTICIPATIVE LEARNING
VALUE ADDED COURSE



(Approved by AICTE, New Delhi, Affiliated to Anna University, Chennai-25) Kaikkurichi, Pudukkottai, Tamil Nadu – 622 303, India

#### DEPARTMENT OF CIVIL ENGINEERING

#### ACADEMIC YEAR 2019-2020 / ODD SEMESTER

Date: 19/06/2019

#### **DEPARTMENT CIRCULAR**

It is informed that Value added course organized by Department of Civil Engineering on "Corrosion of RC structures" for all Second, Third & Final year Civil Engineering students in association with T.R.M Constructions from 24.6.2019 to 28.6.2019. Certificates will be issued to the eligible participants at the end of the Course. The following resource person will handle the session.

S.No.	Name of the Course	Resource Person
1.	Corrosion of RC structures	Er.T.Muruganandham B.E., Licensed Building Surveyor and Consultant, TRM Constructions, Trichy.

Cc:

- Principal's Office
- IQAC Coordinator
- Class In charges II, III & IV-year of Civil Engineering
- II, III & IV-year Civil Engineering Students
- Notice Board

HOD / CIVIL
SRI BHARATHI ENGINEER
COLLEGE FOR WOMEN
KAIKKURICHI,
PUDUKKOTTAI - 622 303

Dr. S.THILAGAVATHI M.E.,Ph.D., PRINCIPAL SRI BHARATHI ENGINEERING COLLEGE FOR WOMEN Kaikkurchi - 622 303, Pudukkottai Dt.



(Approved by AICTE, New Delhi, Affiliated to Anna University, Chennai-25) Kaikkurichi, Pudukkottai, Tamil Nadu - 622 303, India

#### DEPARTMENT OF CIVIL ENGINEERING

#### **ACADEMIC YEAR 2019-2020 / ODD SEMESTER**

### Value Added Course on "Corrosion of RC structures"

#### **SYLLABUS**

S.NO	TOPIC COVERED	DURATION (in hours)	DATE FN/AN
1	Impact of corrosion on society	3	24.06.2019
2	Corrosion, pH, potential, reference electrode, potential-pH diagram	3	24.06.2019
3	Corrosion of steel in concrete	3	25.06.2019
4	Actions from aggressive species chloride, carbon dioxide, sulphate, soft water action	3	25.06.2019
5	Type of reinforcement corrosion	3	26.06.2019
6	How to control and prevent concrete corrosion	3	26.06.2019
7	Determine the Rate of Corrosion Damage	3	27.06.2019
8	Indirect Methods for Corrosion Testing and Monitoring	3	27.06.2019
9	Direct Methods for Corrosion Testing and Monitoring	3	28.06.2019
10	Theory of corrosion	3	28.06.2019
	Total Hours	30	

**VAC** Coordinator

SRI BHARATHI ENGINEERING COLLEGE FOR WOMEN KAIKKURICHI.

PUDUKKOTTAI - 622 303

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#### DEPARTMENT OF CIVIL ENGINEERING

# ACADEMIC YEAR 2019-2020 (ODD SEM) STUDENTS PARTICIPATION LIST-VAC PROGRAM CORROSION OF RC STRUCTURES

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S.NO	REG.NO	NAME OF THE STUDENT	YEAR/BRANCH
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1	912618103003	MAHESHWARI V	II/CIVIL
2	912618103005	MEENACHI K	II/CIVIL
3	912618103008	SATHYA M	II/CIVIL
41	912618103009	SRIVIDHYA S	II/CIVIL
5	912618103010	UMAMAHESWARI K	II/CIVIL
106 00	912617103001	CHANDRIKA C	III/CIVIL
7	912617103002	DHESIKAPARTHI D	III/CIVIL
8	912617103003	KARTHIKA K	III/CIVIL
9	912617103004	KASTHURI K	III/CIVIL
10	912617103005	MONIKA K	III/CIVIL
11	912617103006	MUTHUMEENA P	III/CIVIL
12	912617103007	POTHUMPEN A	III/CIVIL
13	912617103008	PRIYADHARSHINI S	III/CIVIL
14	912617103009	RAJESWARI J	III/CIVIL
15	912617103010	SIVAPRIYA S	III/CIVIL
16	912617103701	LAKSHMI A	III/CIVIL
17	912616103001	AARTHI G	IV/CIVIL
18	912616103002	ANANTHI S	IV/CIVIL

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SRI BHARATHI ENGINEERING

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19	912616103004	KANIMOZHI P	IV/CIVIL
20	912616103005	LAVANYA K	IV/CIVIL
21	912616103006	MASILAMANI M	IV/CIVIL
22	912616103007	MENAKA R	IV/CIVIL
23	912616103008	PRAVEENA M	IV/CIVIL
24	912616103301	GOWSIKA N	IV/CIVIL
25	912616103302	KALISWARI M	IV/CIVIL
26	912616103303	MAHESWARI M	IV/CIVIL
27	912616103304	SARATHAPRITHA S	IV/CIVIL

VAC Coordinator

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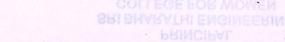
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COLLEGE FOR WOMEN

KAIKKURICHI,
PUDUKKOTTAI - 622 303

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PRINCIPAL

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Kalkkurchi - 622 363, Pudukoffai Ot.



#### SRI BHARATHI ENGINEERING COLLEGE FOR WOMEN

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#### DEPARTMENT OF CIVIL ENGINEERING

ACADEMIC YEAR 2019-2020 (ODD SEM)

#### ATTENDANCE SHEET FOR VALUE ADDED COURSE- CORROSION OF RC STRUCTURES

NO	REG.NO	NAME OF THE	YEAR/	DATE: 24.06.19		DATE: 25.06.19		DATE: 26.06.19		DATE: 27.06.19		DATE: 28.06.19		NO OF SESSIONS	SIGNATURE OF THE
23	912616193908	STUDENT	BRANCH	FN	AN	FN	AN	FN	AN	FN	AN	FN	AN	ATTENDED	STUDENT
1	912618103003	MAHESHWARI V	II/CIVIL	1	1	1	a	1	1	1	a	1	1	8	Meenhi
2	912618103005	MEENACHI K	II/CIVIL	1	1	1	,	1	1	1	1	1	a	9	Meenatchi
3	912618103008	SATHYA M	II/CIVIL	1	a	1	1	,	,	1	1	1	1	9	Sathya
4	912618103009	SRIVIDHYA S	II/CIVIL	1	1	1	1	1	1	1	1	1	1	10	Sring-
5	912618103010	UMAMAHESWARI K	II/CIVIL	1	1	1	1	1	a	1	1	1	1	9	annal.
6	912617103001	CHANDRIKA C	III/CIVIL	1	1	1	1	1	1	1	a	1	1	9	C. Chanoj.
7	912617103002	DHESIKAPARTHI D	III/CIVIL	1	1	1	1	1	1	1	1	1	1	10	D. Bhosika parl
8	912617103003	KARTHIKA K	III/CIVIL	1	1	1	1	)	1	1	1	1	1	10	kasthula K
9	912617103004	KASTHURI K	III/CIVIL	1	a	1	1	7	1	1	1	1	1	9	Kasthui - K
10	912617103005	MONIKA K	III/CIVIL	1	-/	Non	WATE	41 M.E	- bn	, /	1	1	1	10	Monik@1
11	912617103006	MUTHUMEENA P	III/CIVIL	J <sub>S</sub>	RIBHA	PRI	NCIPA		)	1	1	/	1	10	Muthumegra .

COLLEGE FOR WOMEN
Kalkkurchi - 622 303, Pudukkottai DL

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VAC Coordinator

Or. S.THILAGAVATHI M.E., Ph.D. PRINCIPAL

PRINCIPAL
SRI BHARATHI ENGINEERING
COLLEGE FOR WOMEN
Kalkkurchi - 622 303, Pudukkottai Dt.

HoD/Civil HOD / CIVIL SRI BHARATHI ENGINEERING COLLEGE FOR WOMEN KAIKKURICHI, PUDLIKKOTTAI - 622 303



(Approved by AICTE, New Delhi, Affiliated to Anna University, Chennai-25) Kaikkurichi, Pudukkottai, Tamil Nadu – 622 303, India

#### **Report on Value Added Course**

Title:

Corrosion of RC structures

Resource Person:

Er.T.Muruganandham B.E.,

Licensed Building Surveyor and Consultant.

TRM Constructions,

Trichy.

Date of conduct from:

24.06.2019

To: 28.06.2019

Duration:

30 Hours

Organized Department:

CIVIL ENGINEERING

Participant Year:

2, 3, 4 | Semester:

**ODD** 

No. of Students Registered:

27

Venue:

First Floor-Lecture Hall:30

#### Outcome of Value Added Course (VAC): Students are able to

- Know the characteristics of cement and concrete
- Understand the concrete deterioration mechanisms
- Explain the Corrosion of steel in concrete
- Describe the Assessment, diagnosis, repair, and protection of concrete
- Understand the different Methods of protection of reinforced concrete
- Identify the preventive measures for reinforced cement concrete

No. of students successfully completed the VAC course is <u>27 students</u> based on the following assessment process.

#### Assessment Process

- Students securing more than 60% on total score and secured more than 75% in attendance is eligible to receive the certificate for the VAC course conducted
- Total Score = (0.5 \*Attendance in VAC out of 100 percentage + 0.5 \*Test mark in VAC out of 100 marks)

VAC Coordinator

HoD/Civil

SRIBHARATHICHIGINEERIN

PUDUKKOTAL

SRI BHARATHI ENGINEERING COLLEGE FOR WOMEN

KAIKKURICHI, PUDUKKOTTAI - 622 303

Dr. S.THILAGAVATHI M.E., Ph.D.,

SRI BHARATHI ENGINEERING COLLEGE FOR WOMEN Kalkkurchi - 622 303, Pudukkottai Dt.



# TRM CONSTRUCTION

**Green Nest Homes** 

O.A.I.R Complex, JS Garden, Melavaladi, Lalgudi Main Road, Trichy - 621 218 Er. T. MURUGANANDHAM B.E., Licenced Building Surveyor & Consultant

### CERTIFICATE OF PARTICIPATION

THIS CERTIFICATE IS PROUDLY PRESENTED TO

RAJESWARI J, B.E CIVIL-ENGINEERING, III YEAR

SRI BHARATHI ENGINEERING COLLEGE FOR WOMEN.

for successfully completing the

Value Added Courses on

"Corrosion of RC Structures" from 24.06.2019 to 28.06.2019

STHEAGAVATHI M.E., Ph.D., STRUCTURAL ENGINEEER,

SRI BHARATHI ENGINEERING **COLLEGE FOR WOMEN** 

Kalkkurchi - 622 303, Pudukkottai Dt.

TRM CONSTRUCTIONS.



# TRM CONSTRUCTION

**Green Nest Homes** 

O.A.I.R Complex, JS Garden, Melavaladi, Lalgudi Main Road, Trichy - 621 218 Er. T. MURUGANANDHAM B.E., Licenced Building Surveyor & Consultant

# CERTIFICATE OF PARTICIPATION

THIS CERTIFICATE IS PROUDLY PRESENTED TO

SATHYAM, B.E CIVIL-ENGINEERING, II YEAR

SRI BHARATHI ENGINEERING COLLEGE FOR WOMEN,

for successfully completing the

Value Added Courses on

"Corrosion of RC Structures" from 24.06.2019 to 28.06.2019

Dr. S.THILAGAVATHI M.E., Ph.D., STRUCTURAL ENGINEEER,

SRI BHARATHI ENGINEERING **COLLEGE FOR WOMEN** Kalkkurchi - 622 303, Pudukkottai Dt.

TRM CONSTRUCTIONS.



# TRM CONSTRUCTION

**Green Nest Homes** 

O.A.I.R Complex, JS Garden, Melavaladi, Lalgudi Main Road, Trichy - 621 218 Er. T. MURUGANANDHAM B.E., Licenced Building Surveyor & Consultant

# CERTIFICATE OF PARTICIPATION

THIS CERTIFICATE IS PROUDLY PRESENTED TO

MENAKAR, B.E CIVIL-ENGINEERING, IV YEAR

SRI BHARATHI ENGINEERING COLLEGE FOR WOMEN,

for successfully completing the

Value Added Courses on

"Corrosion of RC Structures" from 24.06.2019 to 28.06.2019

Dr. S.THILAGAVATHI M.E., Ph.D.

PRINCIPAL II BHARATHI ENGINEERIN

COLLEGE FOR WOMEN Kalkkurchi - 622 303, Pudukkottai Dt. STRUCTURAL ENGINEEER, TRM CONSTRUCTIONS.

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#### DEPARTMENT OF CIVIL ENGINEERING

#### ACADEMIC YEAR 2019-2020 / ODD SEMESTER

Name of the Student:	Year/Sem:
AU Register Number:	12. What is the process called to which con
Value Added Course on "Co	orrosion of RC structures"
MCQ QUESTIONS	(25X4 = 100  Marks)
The corrosion of reinforcement steel is because  oldeways many them.	of while using ladder one should not lean
sideways more than  a) Carbonation b) Presence of salt	c) Porosity of concrete d) All of the above
2. Corrosion of metals involves	b) facatos es ductifity
<ul><li>a) Physical reactions</li><li>b) Chemical reactions</li></ul>	c) Both d) None
3. The following factors play vital role in corrosio	n process
<ul><li>a) Temperature</li><li>b) Solute concentration</li></ul>	c) Both d) None
4. Following equation is related to corrosion rate	To Indian Standards?
<ul><li>a) Nernst equation</li><li>b) Faraday's equation</li></ul>	c) Either d) Neither
5. Passivity is due to	AX. What is the process called in which tho
a) Higher EMF b) Lower EMF	c) Oxide film d) All
6. Passivity is not the reason for inertness of the fo	ollowing
a) Au b) Al	c) Ni d) Ti
7. Difficult to monitor and very dangerous form of	
a) Galvanic b) Pitting	c) Crevice d) Stress
8. This form of corrosion occurs due to concentrat	tion difference in a component
a) Uniform	c) Inter-granular

SRI BHARATHI ENGINEERING

Kalikkurchi - 622 303, Pudukkotlai Dt.

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Kalkkurchi - 622 303, Pudukkottai Dt.

	b) Galvanic	d) Stress
9.	Main form of ceramic degradation	
	a) Corrosion	c) Dissolution
	b) Weathering	d) Swelling
10.	When Pt and Co are electrically connected, which	ch one gets corroded
	a) Pt	c) None
	b) Co	d) Can't decide
11.	Which of the following can be used for cathodic	protection:
	a) Resources	c) Both resources and project duration time
	b) Project duration time	d) None of the above
12.	What is the process called in which cement reac	ts with water to form a hard, solid material?
	a) Hydration	c) Carbonation
	b) Oxidation	d) Decomposition
12	What is the maximum victor to coment notic for	concrete to be considered high strangth?
13.	What is the maximum water to cement ratio for	전 [1] 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
	a) 0.5	c) 0.7 d) 0.8
	b) 0.6	d) 0.8
14.	What is the role of steel reinforcement in reinfor	
	a) Increases strength	c) Increases durability
	b) Increases ductility	d) All of the above
15	. What is the process called in which steel reinfor surrounding it?	cement corrodes and deteriorates the concrete
	a) Carbonation	c) Alkali-aggregate reaction
	b) Chloride attack	d) Corrosion
16	. What is the minimum compressive strength for to Indian Standards?	concrete used in building construction according
	a) 20 MPA	c) 30 MPA
	b) 25 MPA	d) 35 MPA
17	. What is the process called in which the concrete water and other substances?	surface is treated to increase its resistance to
	a) Sealing	c) Coating
	b) Curing	d) Surface Treatment
18	. What is the process called in which the steel reinfrom corrosion?	nforcement is coated with a material to protect it
	a) Galvanizing	c) Painting
	b) Epoxy coating	d) Anodizing
	a) Craylos	
	assault (b.	

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Kaikkurdh - 822 202 D.M.C.

19	. Which of the following is an example of corrosic	on?
	a) Rusting of iron	c) Liquefaction of ammonia
	b) Tarnishing of silver	d) Rusting of iron and tarnishing of silver
20.	. How many rust will be formed when 100kg of ir	on have completely rusted away?
	a) 100 kg	c) 250 kg
	b) 190 kg	d) 320 kg
21.	Select the incorrect statement from the following	option.
	a) Replacement of corroded equipment is time- consuming	c) Corrosion increases the electrical conductivity of metals
	b) Corrosion causes contamination of product	d) Corrosion causes leakage of toxic liquid or gases
22.	Due to corrosion, which useful properties of meta	als are lost
	a) malleability	c) electrical conductivity
	b) ductility	d) All of the above
23.	Which of the following metal is the best material environment?	I selection combination for the nitric acid
	a) Tin	c) Stainless steels
	b) Nickel and its alloys	d) Steel
24.	Metal undergoes in the process o	f corrosion.
	a) Oxidation	c) Condensation
	b) Reduction	d) Division
25.	Which is the commonly adopted theory of corros	sion?
	a) Direct corrosion	c) Electrochemical corrosion
	b) High temperature oxidation	d) Galvanic action theory

Dr. S.THILAGAVATHI M.E.,Ph.D., PRINCIPAL SRI BHARATHI ENGINEERING COLLEGE FOR WOMEN Kaikkurchi - 622 303, Pudukkotiai Dt.

(Approved by AICTE, New Delhi, Affiliated to Anna University, Chennai-25) Kaikkurichi, Pudukkottai, Tamil Nadu – 622 303, India

#### DEPARTMENT OF CIVIL ENGINEERING

#### ACADEMIC YEAR 2019-2020 / ODD SEMESTER

Value Added Course on "Corrosion of RC structures"

#### **ANSWER KEY**

1	a	6	a	11	a	16	С	21	С
2	b	7	b	12	a	17	a	22	d
3	С	8	С	13	a	18	b	23	С
4	b	9	С	14	d	19	ď	24	a
5	С	10	Ь	15	d	20	b	25	С

Dr. S.THILAGAVATHI M.E., Ph.D., PRINCIPAL

SRI BHARATHI ENGINEERING COLLEGE FOR WOMEN Kalkkurchi - 622 303, Pudukkottai Dt. SRI BHARATHI ENGINEERING COLLEGE FOR WOMEN (Approved by AICTE, New Delhi, Affiliated to Anna University, Chennai-25) Kaikkurichi, Pudukkottai, Tamil Nadu – 622 303, India

#### DEPARTMENT OF CIVIL ENGINEERING

**ACADEMIC YEAR 2019-2020 / ODD SEMESTER** 

Name of the Student: S. Snividhya	Year/Sem: 1	[1]

AU Register Number: 912618103809

Value Added Course on "Corrosion of RC structures"

MCQ QUESTI	ONS (25X4 = 100 Marks)
sideways more than	ecause of while using ladder one should not lean
<ul><li>a) Carbonation</li><li>b) Presence of salt</li></ul>	<ul><li>c) Porosity of concrete</li><li>d) All of the above</li></ul>
2. Corrosion of metals involves	
a) Physical reactions (b) Chemical reactions	c) Both d) None
3. The following factors play vital role in co	prrosion process
<ul><li>a) Temperature</li><li>b) Solute concentration</li></ul>	Both d) None
4. Following equation is related to corrosion	
a) Nernst equation  (b) Faraday's equation	c) Either d) Neither
5. Passivity is due to	
a) Higher EMF b) Lower EMF	© Oxide film d) All
6. Passivity is not the reason for inertness of	f the following
a Au b) Al	c) Ni (d) Ti
7. Difficult to monitor and very dangerous f	Form of corrosion
a) Galvanic	c) Crevice
(b) Pitting	d) Stress

8. This form of corrosion occurs due to concentration difference in a component

a) Uniform

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(C) Inter-granular

b) Galvanic	d) Stress
9. Main form of ceramic degradation	
a) Corrosion	Dissolution
b) Weathering	d) Swelling
10. When Pt and Co are electrically connected, when	nich one gets corroded
a) Pt	c) None
(b) Co	d) Can't decide
11. Which of the following can be used for cathod	lic protection:
(a) Resources	c) Both resources and project duration time
b) Project duration time	d) None of the above
12. What is the process called in which cement re-	acts with water to form a hard solid material?
A) Hydration	c) Carbonation
b) Oxidation	d) Decomposition
L. Eroni Avaninin	TETIO OOM
13. What is the maximum water to cement ratio for	
(a) 0.5	c) 0.7
b) 0.6	d) 0.8
14. What is the role of steel reinforcement in reinf	Forced concrete?
a) Increases strength	© Increases durability
b) Increases ductility	(d) All of the above
<ul><li>15. What is the process called in which steel reinfingurrounding it?</li><li>a) Carbonation</li><li>b) Chloride attack</li></ul>	c) Alkali-aggregate reaction (d) Corrosion
b) Chloride attack	d) Corrosion
16. What is the minimum compressive strength fo to Indian Standards?	r concrete used in building construction according
a) 20 MPA	© 30 MPA
b) 25 MPA	d) 35 MPA
108R0PLX0	ucusunia s suoma (A.2.)
17. What is the process called in which the concrewater and other substances?	te surface is treated to increase its resistance to
(a) Sealing	c) Coating
b) Curing	d) Surface Treatment
	einforcement is coated with a material to protect it
from corrosion?	
a) Galvanizing	c) Painting
(b) Epoxy coating	d) Anodizing
	with 9 (d)
menoration and somethin of	This form, of companies
(c) Amer-granular	Dr. S.THILAGAVATHI M.E., Ph.D.,
Dr. S.THILAGAVATHI M.E. Ph.D.	PRINCIPAL
PRINCIPAL	SRI BHARATHI ENGINEERING
SRI BHARATHI ENGINEERING COLLEGE FOR WOMEN Kaikkurchi - 622 303. Pubukanai pr	COLLEGE FOR WOMEN  Kalkkurchi - 622 303, Pudukkottai Dt.
10 PRONYABBLE COC 770 - HOUNTANDED	

19. Which of the following is an example of corros	ion?
<ul><li>a) Rusting of iron</li><li>b) Tarnishing of silver</li></ul>	<ul><li>c) Liquefaction of ammonia</li><li>d) Rusting of iron and tarnishing of silver</li></ul>
20. How many rust will be formed when 100kg of	iron have completely rusted away?
a) 100 kg b) 190 kg	c) 250 kg d) 320 kg
21. Select the incorrect statement from the followir	ng option.
a) Replacement of corroded equipment is time- consuming	c) Corrosion increases the electrical conductivity of metals
b) Corrosion causes contamination of product	<ul> <li>d) Corrosion causes leakage of toxic liquid of gases</li> </ul>
22. Due to corrosion, which useful properties of me	etals are lost
a) malleability	c) electrical conductivity
b) ductility	d) All of the above
23. Which of the following metal is the best mater environment?	ial selection combination for the nitric acid
a) Tin	(c) Stainless steels
b) Nickel and its alloys	d) Steel
24. Metal undergoes in the process	of corrosion.
a) Oxidation	c) Condensation
b) Reduction	d) Division
25. Which is the commonly adopted theory of corr	rosion?
a) Direct corrosion	© Electrochemical corrosion
b) High temperature oxidation	d) Galvanic action theory

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# CARCUSTON COLLEGE

#### SRI BHARATHI ENGINEERING COLLEGE FOR WOMEN

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#### DEPARTMENT OF CIVIL ENGINEERING

#### ACADEMIC YEAR 2019-2020 / ODD SEMESTER

Name of the Student: M. Kaliswani	Year/Sem: IV /VII
AU Register Number: 9126/610302	12. What is the process called in which cert
nortensias ) (a	orrosion of RC structures"
MCQ QUESTIONS	S(25X4 = 100  Marks)
The corrosion of reinforcement steel is because sideways more than      Carbonation     b) Presence of salt	e of while using ladder one should not lean  c) Porosity of concrete  d) All of the above
<ul><li>2. Corrosion of metals involves</li><li>a) Physical reactions</li><li>b) Chemical reactions</li></ul>	c) Both d) None
<ul><li>3. The following factors play vital role in corrosical</li><li>a) Temperature</li><li>b) Solute concentration</li></ul>	on process  (c) Both (d) None
<ul><li>4. Following equation is related to corrosion rate</li><li>a) Nernst equation</li><li>b) Faraday's equation</li></ul>	c) Either d) Neither
<ul><li>5. Passivity is due to</li><li>a) Higher EMF</li><li>b) Lower EMF</li></ul>	© Oxide film d) All
6. Passivity is not the reason for inertness of the table (a) Au b) Al	following c) Ni d) Ti
<ul><li>7. Difficult to monitor and very dangerous form of</li><li>a) Galvanic</li><li>b) Pitting</li></ul>	c) Crevice d) Stress
8. This form of corrosion occurs due to concentra a) Uniform	ation difference in a component

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		b) Galvanic	d) Stress
	9.	Main form of ceramic degradation	
		a) Corrosion	© Dissolution
		b) Weathering	d) Swelling
	10.	When Pt and Co are electrically connected, which	th one gets corroded
		a) Pt	c) None
		<b>6</b> )Со	d) Can't decide
	11.	Which of the following can be used for cathodic	protection:
	(	a) Resources	c) Both resources and project duration time
		b) Project duration time	d) None of the above
	12.	What is the process called in which cement reac	ts with water to form a hard, solid material?
	(	a) Hydration	c) Carbonation
	,	b) Oxidation	d) Decomposition
	13	What is the maximum water to cement ratio for	concrete to be considered high strength?
		a) 0.5	c) 0.7
	ns	b) 0.6	d) 0.8
	14.	What is the role of steel reinforcement in reinfor	ced concrete?
		a) Increases strength	c) Increases durability
	,	b) Increases ductility	(1) All of the above
	15.	What is the process called in which steel reinfor	cement corrodes and deteriorates the concrete
		surrounding it?	(b) Uneaucal reactions
		a) Carbonation	c) Alkali-aggregate reaction
		b) Chloride attack	(d) Corrosion
	16.	What is the minimum compressive strength for	concrete used in building construction according
		to Indian Standards?	
		a) 20 MPA	© 30 MPA
		b) 25 MPA	d) 35 MPA
	17.	What is the process called in which the concrete	surface is treated to increase its resistance to
		water and other substances?	
	-	a) Sealing	c) Coating
		b) Curing	d) Surface Treatment
	18.	What is the process called in which the steel rein	nforcement is coated with a material to protect it
		from corrosion?	/ IA G
		a) Galvanizing	c) Painting
	~ 1	b) Epoxy coating	d)Anodizing
		b) Crevice	a) Calvanic
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			Dr. S.THILAGAVATHI M.E., Ph.D.,
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100		PRINCIPAL	SRI BHARATHI ENGINEERING
	NG	COLLEGE FOR MOTER	COLLEGE FOR WOMEN Kalkkurchi - 622 303, Pudukkottai Dt.
	10	Kalikkurchi - 622 303, Pudukkortai	

19. Which of the following is an example of corrosi	on?
<ul><li>a) Rusting of iron</li><li>b) Tarnishing of silver</li></ul>	c) Liquefaction of ammonia d) Rusting of iron and tarnishing of silver
of farmshing of shver	di Rusting of hon and tarnishing of silver
20. How many rust will be formed when 100kg of i	ron have completely rusted away?
a) 100 kg	c) 250 kg
(b) 190 kg	d) 320 kg
21. Select the incorrect statement from the following	g option.
a) Replacement of corroded equipment is time- consuming	c) Corrosion increases the electrical conductivity of metals
b) Corrosion causes contamination of product	d) Corrosion causes leakage of toxic liquid o gases
22. Due to corrosion, which useful properties of me	tals are lost
a) malleability	c) electrical conductivity
b) ductility	d)All of the above
23. Which of the following metal is the best materia environment?	al selection combination for the nitric acid
a) Tin	© Stainless steels
b) Nickel and its alloys	d) Steel
24. Metal undergoes in the process	of corrosion.
(a) Oxidation	(c) Condensation
b) Reduction	d) Division
25. Which is the commonly adopted theory of corre	osion?
a) Direct corrosion	c) Electrochemical corrosion
b) High temperature oxidation	d) Galvanic action theory

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#### DEPARTMENT OF CIVIL ENGINEERING

35(9577 HE3 7)		() () 2
ACADEMIC YEAR	2019-2020 / ODD SEM	ESTER
Name of the Student: D. Dhesi	kaparthi	Year/Sem: / /.
AU Register Number: 91261710	3002	amoneranti teleproti
Value Added Course on	"Corrosion of RC s	structures"
MCQ QUESTION	ONS $(25X4 = 100 \text{ M})$	arks)
The corrosion of reinforcement steel is be sideways more than      Carbonation     Presence of salt	cause of while using lade c) Porosity of d) All of the ab	concrete
<ul><li>2. Corrosion of metals involves</li><li>a) Physical reactions</li><li>b) Chemical reactions</li></ul>	d) None	
<ul><li>3. The following factors play vital role in co</li><li>a) Temperature</li><li>b) Solute concentration</li></ul>	rrosion process  © Both d) None	
<ul><li>4. Following equation is related to corrosion</li><li>a) Nernst equation</li><li>b) Faraday's equation</li></ul>	rate c) Either d) Neither	
5. Passivity is due to a) Higher EMF b) Lower EMF	© Oxide film d) All	
6. Passivity is not the reason for inertness of  (a) Au  (b) Al	the following c) Ni d) Ti	

7. Difficult to monitor and very dangerous form of corrosion

a) Galvanic

(c) Crevice

(b) Pitting

d) Stress

8. This form of corrosion occurs due to concentration difference in a component

a) Uniform

c) Inter-granular

Dr. S.THILAGAVATHI M.E., Ph.D., **PRINCIPAL** 

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b) Galvanic	d) Stress
9. Main form of ceramic deg	gradation
a) Corrosion	c) Dissolution
b) Weathering	d) Swelling
10. When Pt and Co are electronic	rically connected, which one gets corroded
a) Pt	© None
(b) Co	d) Can't decide
11 Which of the following or	an be used for cathodic protection:
a) Resources	c) Both resources and project duration time
b) Project duration time	d) None of the above
12 What is the process called	in which cement reacts with water to form a hard, solid material?
(a) Hydration	c) Carbonation
b) Oxidation	d) Decomposition
(adval4.0)	A = A KEET REMONESTRONG OF MA
	ter to cement ratio for concrete to be considered high strength?
(a) 0.5 b) 0.6	c) 0.7 d) 0.8
0) 0.0	a) 0.0
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a) Increases strength	c) Increases durability
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to Indian Standards?	
a) 20 MPA	©)30 MPA
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	in which the concrete surface is treated to increase its resistance to
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18 What is the process called	in which the steel reinforcement is coated with a material to protect it
from corrosion?	in which the sect temoreoment is coated with a material to protect it
a) Galvanizing	Painting
(b) Epoxy coating	d) Anodizing
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	generala (C.)
The Day of the second	Dr. S.THILAGAVATHI M.E., Ph.D.,
DATE WELL	PRINCIPAL
ENGINEERING	HTARAHS 198 SRI BHARATHI ENGINEERING COLLEGE FOR WOMEN
OR WOMEN .	Kalkkurchi - 622 303, Pudukkottai Dt.

Kalikkurchi - 622 303, Puduktottal Dt.

PRINCIPAL SRI BHARATHI ENGINEERING COLLEGE FOR WOMEN Kalkkurchi - 622 303, Pudukkottai Dt.

19. Which of the following is an example of corrosi	on?
a) Rusting of iron	c) Liquefaction of ammonia
b) Tarnishing of silver	d) Rusting of iron and tarnishing of silver
3	g or a continuous and a continuous g or a content
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a) 100 kg	c) 250 kg
(b) 190 kg	d) 320 kg
21. Select the incorrect statement from the following	g option.
(a) Replacement of corroded equipment is time-	2 1
consuming	conductivity of metals
b) Corrosion causes contamination of product	d) Corrosion causes leakage of toxic liquid or
by corresion causes contamination of product	gases
22. Due to corrosion, which useful properties of me	tals are last
a) malleability	c) electrical conductivity
b) ductility	d) All of the above
23. Which of the following metal is the best materia	al selection combination for the nitric acid
environment?	
a) Tin	c) Stainless steels
b) Nickel and its alloys	d) Steel
o) Theker and its anoys	d) Steel
24. Metal undergoes in the process	of corrosion.
(a) Oxidation	c) Condensation
b) Reduction	d) Division
25. Which is the commonly adopted theory of corre	osion?
(a) Direct corrosion	(c) Electrochemical corrosion
b) High temperature oxidation	d) Galvanic action theory
o) riigh temperature oxidation	u) Gaivanic action theory

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# DEPARTMENT OF CIVIL ENGINEERING ACADEMIC YEAR 2019-2020 (ODD SEM)

#### MARK SHEET FOR VALUE ADDED COURSE- CORROSION OF RC STRUCTURES

16. 912617103701 L		LAKSHMI A	TH/CIAIF	ATTENDANCE DETAILS		VAC-MCQ TEST		OVERALL
S.NO	REG.NO	NAME OF THE STUDENT	YEAR/ BRANCH	No of Sessions	Attendance Mark(100)	No of Correct	MCQ Mark(100)	MARK(100) (50% of A +
11	912617103009	RAJESWARI J	HECIVIL	Attended	(A)	Answers	(B)	50% of B)
13	912618103003	MAHESHWARI V	II/CIVIL	8	80	17	68	74
2	912618103005	MEENACHI K	II/CIVIL	9	90	18	72	81
3	912618103008	SATHYA M	II/CIVIL	9	90	20	80	85
4	912618103009	SRIVIDHYA S	II/CIVIL	10	100	22	88	94
5	912618103010	UMAMAHESWARI K	II/CIVIL	9	90	20	80	85
6	912617103001	CHANDRIKA C	III/CIVIL	9	90	21	84	87
7	912617103002	DHESIKAPARTHI D	III/CIVIL	10	100	18	72	86

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			2 2 4 7 1 A 1 4					
8	912617103003	KARTHIKA K	III/CIVIL	10	100	22	88	94
9	912617103004	KASTHURI K	III/CIVIL	9	90	21	84	87
10	912617103005	MONIKA K	III/CIVIL	10	100	18	72	86
11	912617103006	MUTHUMEENA P	III/CIVIL	10	100	22	88	94
12	912617103007	POTHUMPEN A	III/CIVIL	9	90	19	76	83
13	912617103008	PRIYADHARSHINI S	III/CIVIL	8	80	18	72	76
14	912617103009	RAJESWARI J	III/CIVIL	10	100	20	80	90
15	912617103010	SIVAPRIYA S	III/CIVIL	10	100	18	72 (00)	86
16	912617103701	LAKSHMI A	III/CIVIL	VIIIO DVIA	100	20	80	90
17	912616103001	AARTHI G	IV/CIVIL	9	90	19	76	83
18	912616103002	ANANTHI S	IV/CIVIL	YEAR 8019-20	80	17	68	74
19	912616103004	KANIMOZHI P	IV/CIVIL	9	90	20	80	85
20	912616103005	LAVANYA K	IV/CIVIL	10	100	18	72	86
21	912616103006	MASILAMANI M	IV/CIVIL	pr. S.THILAG	80	17	68	74

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22	912616103007	MENAKA R	IV/CIVIL	10	100	22	88	94
23	912616103008	PRAVEENA M	IV/CIVIL	10	100	21	84	92
24	912616103301	GOWSIKA N	IV/CIVIL	9	90	20	80	85
25	912616103302	KALISWARI M	IV/CIVIL	10	100	20	80	90
26	912616103303	MAHESWARI M	IV/CIVIL	9	90	18	72	81
27	912616103304	SARATHAPRITHA S	IV/CIVIL	9	90	21	84	87

**VAC** Coordinator

Dr. S.THILAGAVATHI M.E.,Ph.D., PRINCIPAL

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SRI DHARATHI ENGINEERING COLLEGE FOR WOMEN KAIKKURICHI,

PUDUKKOTTAI - 622 303



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# DEPARTMENT OF CIVIL ENGINEERING

### ACADEMIC YEAR 2019-2020 / EVEN SEMESTER

Date: 04/12/2019

#### **DEPARTMENT CIRCULAR**

This is to inform you that Value Added Course offered by the Department of Civil Engineering for all Second, Third & Final year Civil Engineering students on "Soil pollution and Restoration" in association with "PMP Consultants" from 09.12.2019 to 14.12.2019. Certificates will be issued to the eligible participants at the end of the Course.

S.No.	Name of the Course	Resource Person
1.	Soil pollution and Restoration	Er.M.Pradeep, M.E., Approved Valuer & Chartered Engineer, PMP Consultant, Trichy.

Cc:

Principal's Office

IQAC Coordinator

• Class In charges - II, III & IV-year of Civil Engineering

II, III & IV-year Civil Engineering Students

Notice Board

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#### DEPARTMENT OF CIVIL ENGINEERING

#### ACADEMIC YEAR 2019-2020 / EVEN SEMESTER

#### Value Added Course on "Soil pollution and Restoration"

#### **SYLLABUS**

S.NO	TOPIC COVERED	DURATION (in hours)	DATE
1	General Consideration, physical and chemical, weathering of bedrock	3	09.12.2019
2	Importance of land reclamation, rehabilitation, ecological Restoration	3	09.12.2019
3	Dumping of large quantities of solid waste, Deforestation and soil erosion	3	10.12.2019
4	Indiscriminate use of pesticides, insecticides and herbicides, Chemicals released by industrial wastes	3	10.12.2019
5	Effects on agriculture,urban areas, Ecological imbalance	3	11.12.2019
6	Changes in Soil Structure, Effect on Ecosystem and Biodiversity.	3	11.12.2019
7	Process of increasing soil fertility by innovative approaches, Reducing chemical fertilizer and pesticide use	3	12.12.2019
8	Reusing of materials, Solid waste treatment, Recycling and recovery of material	3	12.12.2019
9	Strengthening of soil structure, Sustainable Practices, Integrated farming	3	13.12.2019
10	Chemical remediation, Remediation of soil pollution using Electrokinentic method.	3	13.12.2019
11	Urban soil degradation waste induced pollution	3	14.12.2019
12	Soil fallout radionuclide contamination	3	14.12.2019
	. Total Hours	36	

VAC Coordinator

Dr. S.THILAGAVATHI M.E. Ph.D.

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#### DEPARTMENT OF CIVIL ENGINEERING

# ACADEMIC YEAR 2019-2020 (EVEN SEM) STUDENTS PARTICIPATION LIST-VAC PROGRAM SOIL POLLUTION AND RESTORATION

S.NO	REG.NO	NAME OF THE STUDENT	YEAR/BRANCH
HVID(V)	21	SERENGEROSSON SARATHAPERTY	10 . 75
1	912618103003	MAHESHWARI V	II/CIVIL
2	912618103005	MEENACHI K	II/CIVIL
3	912618103008	SATHYA M	II/CIVIL
4	912618103009	SRIVIDHYA S	II/CIVIL
5	912618103010	UMAMAHESWARI K	II/CIVIL
6	912617103001	CHANDRIKA C	III/CIVIL
7	912617103002	DHESIKAPARTHI D	III/CIVIL
8	912617103003	KARTHIKA K	III/CIVIL
9	912617103004	KASTHURI K	III/CIVIL
10	912617103005	MONIKA K	III/CIVIL
11	912617103006	MUTHUMEENA P	III/CIVIL
12	912617103007	POTHUMPEN A	III/CIVIL
13 <sub>000</sub>	912617103008	PRIYADHARSHINI S	III/CIVIL
14	912617103009	RAJESWARI J	III/CIVIL
15	912617103010	SIVAPRIYA S	III/CIVIL
16	912617103701	LAKSHMI A	III/CIVIL
17	912616103001	AARTHI G	IV/CIVIL
18	912616103002	ANANTHI S	IV/CIVIL

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19	912616103004	KANIMOZHI P	IV/CIVIL
20	912616103005	LAVANYA K	IV/CIVIL
21	912616103006	MASILAMANI M	IV/CIVIL
22	912616103007	MENAKA R	IV/CIVIL
23	912616103008	PRAVEENA M	IV/CÍVIL
24	912616103301	GOWSIKA N	IV/CIVIL
25	912616103302	KALISWARI M	IV/CIVIL
26	912616103303	MAHESWARI M	IV/CIVIL
27	912616103304	SARATHAPRITHA S	IV/CIVIL

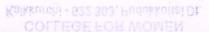
VAC Coordinator

HoD/Civil
HCD / CIVIL
SRI BHARATHI ENGINEERING
COLLEGE FOR WOMEN
KAIKKURICHI,
PUDUKKOTTAI - 622 303

Dr. S:THILAGAVATHI M.E.,Ph.D., PRINCIPAL SRI BHARATHI ENGINEERING COLLEGE FOR WOMEN

Kalkkurchi - 622 303, Pudukkottai Dţ,

Dr. S.THILAGAVATHI M.E., Ph.D.
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COLLEGE FOR WOMEN
Kaikkurchi - 822 303, Pudurkoital Dt.





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#### DEPARTMENT OF CIVIL ENGINEERING

ACADEMIC YEAR 2019-2020 (EVEN SEM)

# ATTENDANCE SHEET FOR VALUE ADDED COURSE- SOIL POLLUTION AND RESTORATION

s.no	territation of the same of the same	NAME OF THE STUDENT	YEAR/		ATE: .12.19	DATE: 10.12.19			ATE: 12.19	DATE: 12.12.19			ATE: 12.19		TE: 12.19	NO OF SESSIONS	SIGNATUR
and an application con-			BRANCH	FN	AN	FN	AN	FN	AN	FN	AN	FN	AN	FN	AN	ATTENDED	OF THE STUDENT
1	912618103003	MAHESHWARI V	II/CIVIL .	1	1	1	1	1	a	1	1	1	a	1	1	10	Menh
2	912618103005	MEENACHI K	II/CIVIL	1	1	1	1	1	,	,	a	1	,	,	1	10	Meenal
3	912618103008	SATHYA M .	II/CIVIL	,	1	1	1	1	,	1	1	,	1	1	,	10	The state of the s
40	912618103009	SRIVIDHYA S	II/CIVIL	,	,	,	1	1		1	,	/	1	,	/	12	Soins
5	912618103010	UMAMAHESWARI K	II/CIVIL	1	a	,	1	,	1	,	,	,	,	1	,	(2	7
6	912617103001	CHANDRIKA C	III/CIVIL	1	1	1	1	1	1	1	1	1	a	1	1		C. chang
7	912617103002	DHESIKAPARTHI D	III/CIVIL	1	1	1	1	1	1	1	,	,	,	,	1	12	THE WAR STREET
8	912617103003	KARTHIKA K	III/CIVIL	,	,	1	a	1	,	1	,	1	,	1	1		D. Dheika
9	912617103004	KASTHURI K	III/CIVIL	,	1	1	1	,	a	,	,	1	/	,	,	[]	K. Korthika
10	912617103005	MONIKA K	III/CIVIL	,	,	,	,	,	1	/	/	,	/	,	,		Kastheri.
1/1	912617103006	MUTHUMEENA PA	III/CIVIL	1	he/s.	ruh	nghy	PATH	I M.E.,	PH D	/	,	/	1	1	12	Monikal

SRI BHARATHI ENGINEERING
COLLEGE FOR WOMEN
Kalkkurchi - 622 303, Pudukkottai DL

12	912617103007	POTHUMPEN A	III/CIVIL	to	1	1	1	1	a	1	)	1	P	1	1	t)	Pother
13	912617103008	PRIYADHARSHINI S	III/CIVIL	1	1	1	a	1	1	1	i	1	a	1	1	10	Pour athy
14	912617103009	RAJESWARI J	III/CIVIL	1	1	1	1	1	a	1	1	1	1	1	1	1)	Rajeshwari
15	912617103010	SIVAPRIYA S	III/CIVĮL	1	a	1	1	1	1	1	a	1	1	1	1	10	B. Siva
16	912617103701	LAKSHMI A	III/CIVIL	1	1	1	a	1	1	1	1	1	1	1	1	1)	Labolin
17	912616103001	AARTHI G	IV/CIVIL	1	1	1	1	1	1	1	a	1	1	1	a	10	9-1.
18	912616103002	ANANTHI S	IV/CIVIL	1	a	1	1	1	a	1	1	1	1	1	1	10	Ananthé
19	912616103004	KANIMOZHI P	IV/CIVIL	1	1	1	1	1	1	1	1	1	1	1	1	12	Kanin
20	912616103005	LAVANYA K	IV/CIVIL	1	1	1	1	1	1	1	1	1	1	1	1	12	davange
21	912616103006	MASILAMANI M	IV/CIVIL	1	1	1	1	1	1	1	a	1	1	1	1	()	Mailanc
22	912616103007	MENAKA R	IV/CIVIL	1	a	1	1	1	1	1	1	1	1	1	1	U	Menaka:
23	912616103008	PRAVEENA M	IV/CIVIL	1	1	1	1	1	1	1	1	1	1	1	1	12	Preef.
24	912616103301	GOWSIKA N	IV/CIVIL	1	1	1	1	1	1	1	1	1	1	1.	1	12	Growile
25	912616103302	KALISWARI M	IV/CIVIL	,	1	,	1	,	i	1	1	1	1	1	1	12	da +
26	912616103303	MAHESWARI M	IV/CIVIL	1	1	1	a	1	1	1	1	1	1	1	a	10	Meen
27	912616103304	SARATHAPRITHA S	IV/CIVIL	1	1	1	1	1	a	1	1	1	1	1	1	no()	Rof.

Kalkkurchi - 622 303, Pudukkomi Da

VAC Coordinator

Dr. S:THILAGAVATHI M.E., Ph. D SRI BHARATHI ENGINEERING PRINCIPAL COLLEGE FOR WOMEN

**SRI BHARATHI ENGINEERING COLLEGE FOR WOMEN** Kaikkurchi - 622 303, Pudukkottai Dt. HoD/Civil HOD/CIVIL

COLLEGE FOR WOMEN KAIKKURICHI, PUDUKKOTTAI - 622 303



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#### **Report on Value Added Course**

Title:

Soil pollution and Restoration

Er.M.Pradeep, M.E.,

Resource Person:

Approved Valuer & Chartered Engineer,

PMP Consultant.

Trichy.

Date of conduct from:

09.12.2019

To: 14.12.2019

Duration:

36 Hours

Organized Department:

CIVIL ENGINEERING

Participant Year:

2, 3, 4

Semester: EVEN

No. of Students Registered:

27

Venue:

First Floor: Lecture Hall:30

#### Outcome of Value Added Course (VAC): Students are able to

- Apply knowledge of soil structure and soil formation to address soil environment issues.
- Apply physical and chemical parameters of soil environment in the process of soil degradation and pollution assessment.
- Evaluate the soil degradation, advantages and disadvantages of preventing and improving methods for soil pollution.
- Assess the causes and sources of pollution to treat soil contamination.
- compare remediation technology and improve the remediate.
- Conceive ideas of soil environment improvement in soil degradation and pollution.

No. of students successfully completed the VAC course is 27 students based on the following assessment process.

#### **Assessment Process**

- Students securing more than 60% on total score and secured more than 75% in attendance is eligible to receive the certificate for the VAC course conducted
- Total Score = (0.5 \*Attendance in VAC out of 100 percentage + 0.5 \*Test mark in VAC out of 100 marks)

AC Coordinator

SRI BHARATHI ENGINEERING SRI BHARATHI EI COLLEGE FOR WOMEN URICHI

COLLEGE FOR KAIKKURICHI - 622 303. PUDUKKOTTAI DISTRICT

COLLEGE FOR WOMEN

Kaikkurchi - 622 303, Pudukkottai Dt.



# CERTIFICATE OF PARTICIPATION

This is to certify that

MUTHUMEENA P, B.E - CIVIL ENGINEERING, III YEAR

from Sri Bharathi Engineering College for Women,

has successfully participated 6 days Value Added Course on

"Soil pollution and Restoration"

during

09.12.2019-14.12.2019

Dr. S.THILAGAVATHI M.E.,Ph.D., PRINCIPAL SRI BHARATHI ENGINEERING

COLLEGE FOR WOMEN
Kaikkurchi - 622 303, Pudukkottai Dt.

M. Prodesp

Registered Structural Engineer



# CERTIFICATE OF PARTICIPATION

This is to certify that

UMAMAHESWARI K, B.E - CIVIL ENGINEERING, II YEAR

from Sri Bharathi Engineering College for Women,

has successfully participated 6 days Value Added Course on

"Soil pollution and Restoration"

during

09.12.2019-14.12.2019

Dr. S.THILAGAVATHI M.E., Ph.D.,
PRINCIPAL

SRI BHARATHI ENGINEERING COLLEGE FOR WOMEN Kaikkurchi - 622 303, Pudukkottai Dt. Registered Structural Engineer

M. Produp



# CERTIFICATE OF PARTICIPATION

This is to certify that

LAVANYA K, B.E - CIVIL ENGINEERING, IV YEAR

from Sri Bharathi Engineering College for Women,

has successfully participated 6 days Value Added Course on

"Soil pollution and Restoration"

during

09.12.2019-14.12.2019

Dr. S.THILAGAVATHI M.E.,Ph.D.,

SRI BHARATHI ENGINEERING COLLEGE FOR WOMEN Kaikkurchi - 622 303, Pudukkottai Dt. M. Prodesp

Registered Structural Engineer



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#### DEPARTMENT OF CIVIL ENGINEERING

ACADEMIC YEAR 2019-	2020 / EVEN SEMESTER
Name of the Student:	Year/Sem:
AU Register Number:	
Value Added Course on "Soil	pollution and Restoration"
MCQ QUESTIONS	(25X4 = 100 Marks)
<ul><li>1. What is negative Soil Pollution?</li><li>a) It indicates a reduction in soil productivity due to erosion and overuse</li></ul>	y c) Converting fertile land into hardened land by dumping ash, sludge and garbage
b) Reduction in soil productivity due to the addition of pesticides	e d) None of the above
<ul><li>2. The quantity of DDT at each trophic level in t</li><li>a) Decreases</li><li>b) Remains the same</li></ul>	the Food Chain c) Increases d) Changes
<ul><li>3. DDT is a major contributor to Pollution becau</li><li>a) It kills useful microorganisms</li><li>b) It destroys valuable species of worms</li></ul>	c) It is non-biodegradable d) It interferes with pesticides
<ul><li>4. The chemicals released due to unsustainable as</li><li>a) Pathogens</li><li>b) Chemical fertilizers</li></ul>	gricultural practices and cause Soil Pollution are c) Strontium-90 d) Weedicides
<ul><li>5. Slash and burn agriculture, which is not a healt important nutrients, is a part of which of the for a) Striping farming</li><li>b) Intercrop farming</li></ul>	thy technique of farming and depletes soil of the following?  c) Jhum cultivation d) None of the above
6. How are PAHs related to Soil Pollution?  a) They are carcinogenic organic compounds b) They are fertilizer wastes	c) They are inorganic wastes from industries d) They are harmful metals that pollute the
<ul><li>7. Soil pollution due to PAHs can be sourced to</li><li>a) vehicle emissions</li><li>b) cigarette smoke</li></ul>	c) extraction of shale oil d) All of the above

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d) All of the above

8.	Benzene and Methylbenzene the major Soil Poare	ollutants mostly from the Petroleum Industries
	a) Heavy organic pollutants	c) Carcinogenic pollutants
	b) Inorganic pollutants	d) None of the above
9.	Which of these pollutants is a Herbicide?	A MINERAL MANAGEMENT OF THE PROPERTY OF THE PR
	a) PHPs	c) Chlorinated hydrocarbons
	b) Amides	d) Copper Sulfate
10	. Which of the following serves as an indicator	of Atmospheric Pollution
	a) Fern	c) Hornworts
	b) Liverworts	d) Epiphytic lichens
11	. Why is area treatment important for Soil?	
	a) To reduce the impact of raindrops on the	c) Not treating the upper catchment and
	soil	proceeds towards an outlet
	b) To maximize surface run-off	d) Not storing surplus rainwater
12	Which type of land/soil pollution cause makes	soil unfit for cultivation due to high salt
	content? a) Carbonisation	c) Salinization
	b) Oxygenation	d) Desertification
12	Dhaanhama untaka in alkali asil in the form of	
13	Phosphorus uptake in alkali soil in the form of	f
	a) H <sub>2</sub> PO <sub>4</sub>	d) H <sub>3</sub> PO <sub>4</sub>
	b) HPO <sub>4</sub> <sup>2-</sup>	u) n <sub>3</sub> rO <sub>4</sub>
14	. Which fertilizer produce acidity in soil	
	a) Ammonium sulfate	c) Calcium ammonium nitrate
	b) Sodium nitrate	d) Calcium nitrate
15	. Maximum N content found in N fertilizer	
	a) Urea	c) Sodium nitrate
	b) Anhydrous ammonia	d) Ammonium sulphate
16	5. The phenomenon slickenside found in which	soil between missing and bas deals as
	a) Inceptisol	c) Gelisol
	b) Vertisol	d) Spodosol
17	7. pF scale for Field capacity is	
	a) 2	of c) 3.5 feet of banklan All All and world in
	b) 2.5	d) 4.5
18	3. What main kind of pollution affects the health	
	a) Minerals	c) Soil Pollution
	b) Roots	d) Plant health
	tro englate de de la companya (u englate englate (un la companya englate	
19	9. Which soil horizon contains decomposed plan	
	a) A Horizon	c) C Horizon
	b) B Horizon	d) O Horizon THILAGAVATHI M.E. Ph.D., PRINCIPAL
	BHARATHI ENGINEERING	SRI BHARATHI ENGINEERING COLLEGE FOR WOMEN
	OLLEGE FOR WOMEN	Kalkkurchi - 622 303, Pudukkottai Dt.
	artianaldining but 35g-11019	The second secon

20. Which of these factors is not a cause in an inc	resae in land pollution?
a) Increase in solid waste of garbage on open lots	c) Proper disposal of cans in nearby bins
b) Toxic waste	d) Radioactive waste
21. Immobilization of sulphur occur in soil when	C:S ratio is
a) < 300:1	c) > 400:1
b) > 300:1	d) > 200:1
22. Ammonia volatilization is purely process of _	
a) Physical	c) Biological
b) Chemical	d) None of the above
23. Which chemical compound is used for improve capacity of soil	ve soil aeration, infiltration and water holding
a) Jalshakti	c) Hydrotech A
b) Fentachlore	d) None of the above
24. Saline soil also known as	
a) Solonchalk	c) Sodochalk
b) Solonetz	d) None of the above
25. Which clay mineral is responsible for cracking	g in black soil?
a) Kaolinite	c) Vermiculite
b) Illite	d) Montmorillonite

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#### DEPARTMENT OF CIVIL ENGINEERING

#### ACADEMIC YEAR 2019-2020 / EVEN SEMESTER

Value Added Course on "Soil pollution and Restoration"

#### **ANSWER KEY**

1	a	6	a	11	a	16	b	21	c
2	c	7	d	12	С	17	ь	22	b
3	c	8	С	13	с	18	С	23	a
4	ь	9	a	14	a	19	d	24	a
5	С	10	b	15	b	20	С	25	d

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#### DEPARTMENT OF CIVIL ENGINEERING

## ACADEMIC YEAR 2019-2020 / EVEN SEMESTER

Name of the Student: Meenachi-k Year/Sem: 11

AU Register Number: 912618103005

Value Added Course on "Soil pollution and Restoration"

value Added Course on "Son	pollution and Restoration"
MCQ QUESTIONS	(25X4 = 100 Marks)
What is negative Soil Pollution?     indicates a reduction in soil productivity due to erosion and overuse	c) Converting fertile land into hardened land by dumping ash, sludge and garbage
b) Reduction in soil productivity due to the addition of pesticides	d) None of the above
<ol> <li>The quantity of DDT at each trophic level in the a) Decreases</li> <li>Remains the same</li> </ol>	ne Food Chain  (c) Increases (d) Changes
<ul><li>DDT is a major contributor to Pollution becaus</li><li>a) It kills useful microorganisms</li><li>b) It destroys valuable species of worms</li></ul>	se of  (c) It is non-biodegradable  (d) It interferes with pesticides
<ul> <li>4. The chemicals released due to unsustainable ag</li> <li>a) Pathogens</li> <li>b) Chemical fertilizers</li> </ul>	ricultural practices and cause Soil Pollution are c) Strontium-90 d) Weedicides
5. Slash and burn agriculture, which is not a health important nutrients, is a part of which of the fo a) Striping farming burnercrop farming	
6. How are PAHs related to Soil Pollution?  (a) They are carcinogenic organic compounds	c) They are inorganic wastes from industries

7. Soil pollution due to PAHs can be sourced to

a) vehicle emissions

b) They are fertilizer wastes

b) cigarette smoke

Kalkkozobi 922 303, Pudukkor

c) extraction of shale oil

d) They are harmful metals that pollute the

soil a notable of to back niam soll

d) All of the above

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a) Heavy organic pollutants	© Carcinogenic pollutants
b) Inorganic pollutants	d) None of the above
. Which of these pollutants is a Herbicide?	
(a)PHPs b) Amides	c) Chlorinated hydrocarbons d) Copper Sulfate
0. Which of the following serves as an indic	eator of Atmospheric Pollution
a) Fern b) Liverworts	d) Epiphytic lichens
1. Why is area treatment important for Soil?	)
a) To reduce the impact of raindrops on the soil	he c) Not treating the upper catchment and proceeds towards an outlet
b) To maximize surface run-off	d) Not storing surplus rainwater
2. Which type of land/soil pollution cause m content?	nakes soil unfit for cultivation due to high salt
a) Carbonisation b) Oxygenation	© Salinization d) Desertification
3. Phosphorus uptake in alkali soil in the for	2. The quantity of DDT at each months fo my
a) H <sub>2</sub> PO <sub>4</sub> <sup>-</sup> b) HPO <sub>4</sub> <sup>2-</sup> contain (b)	d) H <sub>3</sub> PO <sub>4</sub>
4. Which fertilizer produce acidity in soil	
a) Ammonium sulfate b) Sodium nitrate	c) Calcium ammonium nitrate d) Calcium nitrate
5. Maximum N content found in N fertilizer	4 [The chemicals released due to unsystainal
a) Urea  (b) Anhydrous ammonia	c) Sodium nitrate d) Ammonium sulphate
6. The phenomenon slickenside found in w	salesh and burn agriculture, whic lios his
a) Inceptisol	c) Gelisol d) Spodosol
7. pF scale for Field capacity is	
a) 2	c) 3.5 % of bonder all All end woll .0
	d) 4.5
8. What main kind of pollution affects the h	
<ul><li>a) Minerals</li><li>b) Roots</li></ul>	(c) Soil Pollution d) Plant health
	Dr. S.THILAGAVATHI M.E.,P
9. Which soil horizon contains decomposed	plants and animals? SRI BHARATHI ENGINEERING COLLEGE FOR WOMEN
a) A Horizon b) B Horizon	c) C Horizon  Kalkkunchi - 622 303, Pudukkottai D

20. Which of these factors is not a cause in an inc	resae in land pollution?
a) Increase in solid waste of garbage on open lots	Proper disposal of cans in nearby bins
b) Toxic waste	d) Radioactive waste
21. Immobilization of sulphur occur in soil when	C:S ratio is
a) < 300:1	(c)> 400:1
b) > 300:1	d) > 200:1
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a) Physical	©Biological
(b) Chemical	d) None of the above
23. Which chemical compound is used for improve capacity of soil	ve soil aeration, infiltration and water holding
(a))Jalshakti	c) Hydrotech A
b) Fentachlore	d) None of the above
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(a) Solonchalk	c) Sodochalk
b) Solonetz	d) None of the above
25. Which clay mineral is responsible for cracking	g in black soil?
a) Kaolinite	c) Vermiculite
b) Illite	(d) Montmorillonite

Dr. S.THILAGAVATHI M.E., Ph.D.,
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#### DEPARTMENT OF CIVIL ENGINEERING

#### ACADEMIC YEAR 2019-2020 / EVEN SEMESTER

Name of the Student: Saratha Pridha. Syear/Sem: 10/VIII

AU Register Number: 912616103304

b) cigarette smoke

Value Added Course on "S	oil pollution and Restoration"
MCQ QUESTION	NS (25X4 = 100 Marks)
What is negative Soil Pollution?      alt indicates a reduction in soil production due to erosion and overuse	ivity c) Converting fertile land into hardened land by dumping ash, sludge and garbage
b) Reduction in soil productivity due to addition of pesticides	the d) None of the above
2. The quantity of DDT at each trophic level	in the Food Chain
a) Decreases	(c) Increases
b) Remains the same	d) Changes
3. DDT is a major contributor to Pollution be	cause of
a) It kills useful microorganisms	(C) It is non-biodegradable
b) It destroys valuable species of worms	d) It interferes with pesticides
4. The chemicals released due to unsustainabl	e agricultural practices and cause Soil Pollution are
a) Pathogens	c) Strontium-90
(b) Chemical fertilizers	d) Weedicides
5. Slash and burn agriculture, which is not a h important nutrients, is a part of which of the	ealthy technique of farming and depletes soil of the see following?
a) Striping farming	Jhum cultivation
b) Intercrop farming	d) None of the above
6. How are PAHs related to Soil Pollution?	
a) They are carcinogenic organic compount b) They are fertilizer wastes	ds c) They are inorganic wastes from industries d) They are harmful metals that pollute the soil
7. Soil pollution due to PAHs can be sourced	to amost de
a) vehicle emissions	c) extraction of shale oil

(d) All of the above

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a) Heavy organic pollutants	(c) Carcinogenic pollutants
b) Inorganic pollutants	d) None of the above
Which of these pollutants is a Herbicide?	
a)PHPs b) Amides	<ul><li>c) Chlorinated hydrocarbons</li><li>d) Copper Sulfate</li></ul>
O. Which of the following serves as an indicate	or of Atmospheric Pollution
a) Fern b) Liverworts	c) Hornworts d) Epiphytic lichens
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To reduce the impact of raindrops on the soil	c) Not treating the upper catchment and proceeds towards an outlet
b) To maximize surface run-off	d) Not storing surplus rainwater
2. Which type of land/soil pollution cause mak content?	es soil unfit for cultivation due to high salt
<ul><li>a) Carbonisation</li><li>b) Oxygenation</li></ul>	© Salinization d) Desertification
3. Phosphorus uptake in alkali soil in the form	of steem time in Total to which the
a) H <sub>2</sub> PO <sub>4</sub>	©)PO <sub>4</sub> <sup>3-</sup>
(b) HPO <sub>4</sub> <sup>2-</sup>	d) H <sub>3</sub> PO <sub>4</sub>
4. Which fertilizer produce acidity in soil	
(a) Ammonium sulfate b) Sodium nitrate	<ul><li>c) Calcium ammonium nitrate</li><li>d) Calcium nitrate</li></ul>
5. Maximum N content found in N fertilizer	A. The chemicals released due to ansustain
a) Urea (Wanning and A)	c) Sodium nitrate
(b) Anhydrous ammonia	d) Ammonium sulphate
6. The phenomenon slickenside found in which	
a) Inceptisol  Vertisol	c) Gelisol d) Spodosol
7. pF scale for Field capacity is	b) Intercasp farming
a) 2	norsec) 3.5 of at baseletic HAV and wolked
<b>6</b> 2.5	d) 4.5
8. What main kind of pollution affects the heal	th of plants?
a) Minerals	© Soil Pollution
b) Roots	d) Plant health
<ol> <li>Which soil horizon contains decomposed plants</li> <li>A Horizon</li> </ol>	ants and animals?

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20. Which of these factors is not a cause in an inc	resae in land pollution?
a) Increase in solid waste of garbage on open lots	© Proper disposal of cans in nearby bins
b) Toxic waste	d) Radioactive waste
21. Immobilization of sulphur occur in soil when	C:S ratio is
a) < 300:1	(c)> 400:1
b) > 300:1	d) > 200:1
22. Ammonia volatilization is purely process of _	
a) Physical	c) Biological
(f) Chemical	d) None of the above
23. Which chemical compound is used for improve capacity of soil	ve soil aeration, infiltration and water holding
(a) Jalshakti	c) Hydrotech A
b) Fentachlore	None of the above
24. Saline soil also known as	
(a) Solonchalk	c) Sodochalk
b) Solonetz	d) None of the above
25. Which clay mineral is responsible for cracking	g in black soil?
a) Kaolinite	c) Vermiculite
b) Illite	Montmorillonite

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## DEPARTMENT OF CIVIL ENGINEERING

ACADEMIC YEAR 2019-2020 / EVEN SEMESTER /20
Name of the Student: A. Polkumpen Year/Sem: 11/VI (25)
AU Register Number: 912617103007
Value Added Course on "Soil pollution and Restoration"
MCQ QUESTIONS (25X4 = 100 Marks)
<ol> <li>What is negative Soil Pollution?</li> <li>a) It indicates a reduction in soil productivity due to erosion and overuse</li> <li>c) Converting fertile land into hardened land by dumping ash, sludge and garbage</li> </ol>
b) Reduction in soil productivity due to the d) None of the above addition of pesticides
2. The quantity of DDT at each trophic level in the Food Chain a) Decreases b) Remains the same c) Increases d) Changes
3. DDT is a major contributor to Pollution because of  a) It kills useful microorganisms b) It destroys valuable species of worms d) It interferes with pesticides
<ul> <li>4. The chemicals released due to unsustainable agricultural practices and cause Soil Pollution are</li> <li>a) Pathogens</li> <li>b) Chemical fertilizers</li> <li>d) Weedicides</li> </ul>
<ul> <li>5. Slash and burn agriculture, which is not a healthy technique of farming and depletes soil of the important nutrients, is a part of which of the following?</li> <li>a) Striping farming</li> <li>b) Intercrop farming</li> <li>d) None of the above</li> </ul>
<ul> <li>6. How are PAHs related to Soil Pollution?</li> <li>a) They are carcinogenic organic compounds</li> <li>b) They are fertilizer wastes</li> <li>c) They are inorganic wastes from industries</li> <li>d) They are harmful metals that pollute the soil</li> </ul>
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7. Soil pollution due to PAHs can be sourced to

a) vehicle emissions

b) cigarette smoke

c) extraction of shale oil

d) All of the above

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are	
<ul><li>a) Heavy organic pollutants</li><li>b) Inorganic pollutants</li></ul>	c) Carcinogenic pollutants d) None of the above
9. Which of these pollutants is a Herbicide	?
(a) PHPs b) Amides	<ul><li>c) Chlorinated hydrocarbons</li><li>d) Copper Sulfate</li></ul>
10. Which of the following serves as an ind	licator of Atmospheric Pollution
a) Fern b) Liverworts	c) Hornworts d) Epiphytic lichens
11. Why is area treatment important for Soi	il?
a) To reduce the impact of raindrops on soil	proceeds towards an outlet
b) To maximize surface run-off	d) Not storing surplus rainwater
12. Which type of land/soil pollution cause content?	makes soil unfit for cultivation due to high salt
(a) Carbonisation	© Salinization
b) Oxygenation	d) Desertification
13. Phosphorus uptake in alkali soil in the f	form of cloop roses is TGGT at vibrasip of T
a) $H_2PO_4^-$	© PO <sub>4</sub> <sup>3-</sup>
b) HPO <sub>4</sub> <sup>2-</sup>	d) H <sub>3</sub> PO <sub>4</sub> seems and emisma A (d)
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16. The phenomenon slickenside found in	which soil advantagement broadens as a
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17. pF scale for Field capacity is	
a) 2	c) 3.5
(b) 2.5	<b>(1)</b> 4.5
18. What main kind of pollution affects the	health of plants?
a) Minerals	© Soil Pollution
b) Roots	d) Plant health
19. Which soil horizon contains decompose	ed plants and animals?
a) A Horizon	c) C Horizon
b) B Horizon	BO HOPIZON THILAGAVATHI M.E., Ph.D., PRINCIPAL

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(b) Illite	c) Vermiculite d) Montmorillonite

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## DEPARTMENT OF CIVIL ENGINEERING

ACADEMIC YEAR 2019-2020 (EVEN SEM)

# MARK SHEET FOR VALUE ADDED COURSE- SOIL POLLUTION AND RESTORATION

S.NO	REG.NO	NAME OF THE STUDENT	YEAR/ BRANCH	ATTENDANCE DETAILS		VAC-MCQ TEST		OVERALL
				No of Sessions	Attendance Mark(100)	No of Correct	MCQ Mark(100)	MARK(100) (50% of A +
14	912617103009	KVID2AVKI I	UNCIAIE	Attended	(A)	Answers	(B)	50% of B)
1	912618103003	MAHESHWARI V	II/CIVIL	10	83	18	72	78
2	912618103005	MEENACHI K	II/CIVIL	11	92	19	76	84
3	912618103008	SATHYA M	II/CIVIL	12	100	20	80	90
4	912618103009	SRIVIDHYA S	II/CIVIL	12	100	21	84	92
5	912618103010	UMAMAHESWARI K	II/CIVIL	11	92	18	72	82
6	912617103001	CHANDRIKA C	III/CIVIL	11	92	20	80	86
7	912617103002	DHESIKAPARTHI D	III/CIVIL	12	100	19	76	88

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			The state of the s		Proceedings of the Process of the Pr			
8	912617103003	KARTHIKA K	III/CIVIL	11	92	. 22	88	90
9	912617103004	KASTHURI K	III/CIVIL	11	92	20	80	86
10	912617103005	MONIKA K	III/CIVIL	12	100	20	80	90
11	912617103006	MUTHUMEENA P	III/CIVIL	12	100	21	84	92
12	912617103007	POTHUMPEN A	III/CIVIL	11	92	20	80	86
13	912617103008	PRIYADHARSHINI S	III/CIVIL	10	83	19	76	80
14	912617103009	RAJESWARI J	III/CIVIL	Attended 11	92	22	88	90
15	912617103010	SIVAPRIYA S	III/CIVIL	10	83	20	80	82
16	912617103701	LAKSHMI A	III/CIVIL	VATITATIVE NA N	92	21	84	88
17	912616103001	AARTHI G	IV/CIVIL	10	83	17	68	76
18	912616103002	ANANTHI S	IV/CIVIL	10	83	18	72	78
19	912616103004	KANIMOZHI P	IV/CIVIL	12	100	20	80	90
20	912616103005	LAVANYA K	IV/CIVIL	12	100	18	72	86
21	912616103006	MASILAMANI M	IV/CIVIL	11	92	17	68	80

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22	912616103007	MENAKA R	IV/CIVIL	11	92	20	80	86
23	912616103008	PRAVEENA M	IV/CIVIL	12	100	20	80	90
24	912616103301	GOWSIKA N	IV/CIVIL	12	100	18	72	86
25	912616103302	KALISWARI M	IV/CIVIL	12	100	19	76	88
26	912616103303	MAHESWARI M	IV/CIVIL	10	83	21	84	84
27	912616103304	SARATHAPRITHA S	IV/CIVIL	11	92	22	88	90

VAC Coordinator

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