

## SRI BHARATHI

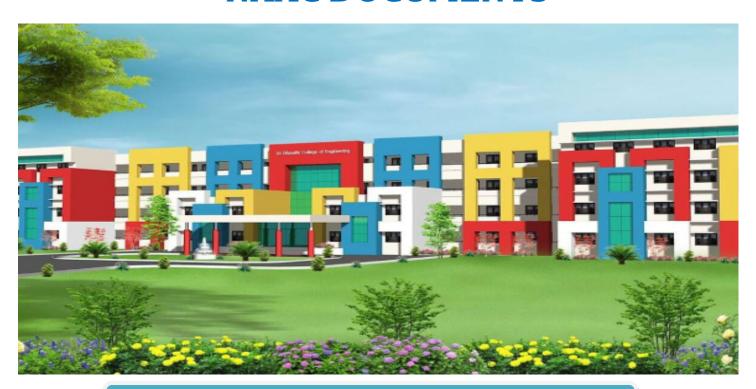
ENGINEERING COLLEGE FOR WOMEN

(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 – 1 CURRICULAR ASPECTS

Submitted by

IQAC
Internal Quality Assurance Cell

Sri Bharathi Engineering College for Women

# A SONGING COLLEGE OF THE PARTY OF THE PARTY

#### SRI BHARATHI ENGINEERING COLLEGE FOR WOMEN

Approved by AICTE, New Delhi, Affiliated to Anna University, Chennai-25 KAIKKURUCHI, PUDUKOTTAI – 622 303 DEPARTMENT OF CIVIL ENGINEERING

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

## 1.2 Academic Flexibility (30)

1.2.1 Number of Certificate/Value added courses offered and online courses of MOOCs, SWAYAM, NPTEL etc. (where the students of the institution have enrolled and successfully completed during the last five years)

#### **AND**

1.2.2 Percentage of students enrolled in Certificate/ Value added courses and also completed online courses of MOOCs, SWAYAM, NPTEL etc. as against the total number of students during the last five years

VAC Title:	COI	RROSION OF RC STRUCTURES										
			U	andham B.E	•	Cons	ultant					
Resource Person:  Licensed Building Surveyor and Consultant, TRM Constructions,												
Date of cond	uct fro	Trich;	y. <b>24.06.201</b>	19	To:	28.06	5.2019	<b>Duration:</b>	30 Hours			
Organized D	epartr	nent :	CIVIL E	NGINEERIN	G	I						
Participant Year: ODD No. of Students Registered: 27												
Venue: Fin	Venue: First Floor - Lecture Hall : 30											

## TABLE OF CONTENTS

SNO	DOCUMENT	PAGE-NO
1	Certificate Course Circular	3-3
2	Certificate Course Schedule	4-4
3	List of students participants	5-6
4	Attendance Of Students	7-8
5	Certificate Course Report	9-9
6	Course Completion Certificates	10-12
7	Certificate Course Test Paper	13-15
8	Certificate Course Answer Key	16-16
9	Certificate Course Test Answer Sheet-Sample	17-25
10	Certificate Course Mark Statement	26-28



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## 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

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

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(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 SEM) STUDENTS PARTICIPATION LIST-VAC PROGRAM CORROSION OF RC STRUCTURES

		MARKET KANDAWARDA	295   296
S.NO	REG.NO	NAME OF THE STUDENT	YEAR/BRANCH
	1 2 8 A	ndistributed a state administration	60 705
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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HOD / CIVIL

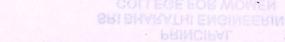
SRI BHARATHI ENGINEERING

COLLEGE FOR WOMEN

KAIKKURICHI,
PUDUKKOTTAI - 622 303

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Kalkkurchi - 622 363, Pudukkoffai 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/	21100113		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	1	10	kasthulia 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	-/	100	when the	41 M.E	- bn	1	1	1	1	10	Monik@1
11	912617103006	MUTHUMEENA P	III/CIVIL	J's	RIBHA	PRI	NCIPA		)	1	1	/	1	10	Muthumegra .

COLLEGE FOR WOMEN
Kalkkurchi - 622 303, Pudukkottai DL

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912617103009	RAJESWARI J	III/CIVIL	1	1	1	1	1	1	1	1	1	1	10	Rajesh mar. J
912617103010	SIVAPRIYA S	III/CIVIL	1	1	1	1	1	1	1	1.	1	1	10	& Divaphya
912617103701	LAKSHMI A	III/CIVIL	1	1	1	,	1	1	1	1	1	1	10	Lakshmill
912616103001	AARTHI G	IV/CIVIL	1	1	1	1	1	1	1	1	1	a	9	6 mg
912616103002	ANANTHI S	IV/CIVIL	1	1	1	1	1	a	1	a	1	1	8	Am Al:
912616103004	KANIMOZHI P	IV/CIVIL	1	1	/	a	1	1	1	1	1	1	9	Anno Ato Li
912616103005	LAVANYA K	IV/CIVIL	1	1	1	1	1	1	1	1	1	1	10	Lavanya
912616103006	MASILAMANI M	IV/CIVIL	1	a	1	1	1	1	1	a	1	1	8	Masilaman
912616103007	MENAKA R	IV/CIVIL	1	1	1	1	1	1	1	1	1	,	10	Monaka R
912616103008	PRAVEENA M	IV/CIVIL	1	1	1	1	1	1	1	,	1	1	10	Pravuf
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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

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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.

(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:	Year/Sem:
AU Register Number:	12. What is the process called in which con
Value Added Course on "Co	orrosion of RC structures"
MCQ QUESTIONS	(25X4 = 100  Marks)
1. The corrosion of reinforcement steel is because	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) facations 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	or Indian Standards?
<ul><li>a) Nernst equation</li><li>b) Faraday's equation</li></ul>	c) Either d) Neither
5. Passivity is due to	3.7. What is the process called in whiteh the
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 manimum vector 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?	HOUSE SERVICES 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) Capyloe	
	establith A	国际所任(第一

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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 of 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?	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
		-, were were

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#### 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	ь	9	С	14	d	19	ď	24	a
5	С	10	Ь	15	d	20	b	25	С

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## DEPARTMENT OF CIVIL ENGINEERING

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

Name of the Student: S. Snividhya	Year/Sem: 1 /	111

AU Register Number: 912618103809

Value Added Course on "Corrosion of RC structures"

MCQ QUESTI	UNS (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
<ul><li>4. Following equation is related to corrosion</li><li>a) Nernst equation</li></ul>	rate c) Either
Faraday's equation	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	the following
a Au b) Al	c) Ni (d) Ti
7. Difficult to monitor and very dangerous for	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, wh	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 rea	acts with water to form a hard solid material?
A) Hydration	c) Carbonation
b) Oxidation	d) Decomposition
L. Broat Byse Okole	TETHO 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 reinforms surrounding it?</li><li>a) Carbonation</li><li>b) Chloride attack</li></ul>	c) Alkali-aggregate reaction  (d) Corrosion
o) Chorac attack	and a controlled
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
17. What is the process called in which the concre	ete surface is treated to increase its resistance to
water and other substances?	
(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
	Since Aging Con-
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- A D minus is in miles.	Dr. S.THILAGAVATHI M.E., Ph.D.,
D. S.I HILAGAVATHI M.E., Ph.D.,	PRINCIPAL SRI BHARATHI ENGINEERING
SRI BHARATHI ENGINEEDHIO	COLLEGE FOR WOMEN
COLLEGE FOR WOMEN Kalkkurchi - 622 303, Pudukonai Dt	Kalkkurchi - 622 303, Pudukkottai DL

19. Which of the following is an example of corros	
<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 following	ng option.
a) Replacement of corroded equipment is time- consuming	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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## 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
Value Added Course on "C	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	(c) Dissolution
	b) Weathering	d) Swelling
10	. When Pt and Co are electrically connected, whi	ch one gets corroded
	a) Pt	c) None
	<b>6</b> )Co	d) Can't decide
11	. Which of the following can be used for cathodic	c 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 read	ets 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?
15	(a) 0.5	c) 0.7
	b) 0.6	d) 0.8
14	. What is the role of steel reinforcement in reinfo	erced concrete?
	(a) Increases strength	c) Increases durability
	b) Increases ductility	(1) All of the above
15	. What is the process called in which steel reinfo	rcement corrodes and deteriorates the concrete
	surrounding it?	(b) Unemical 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 concret	e surface is treated to increase its resistance to
	water and other substances?	
	(a) Sealing	c) Coating
	b) Curing	d) Surface Treatment
18	·	inforcement is coated with a material to protect it
	from corrosion?	) Printing
	a) Galvanizing  (b) Epoxy coating	c) Painting (d))Anodizing
	b Epoxy coating	
	d) Stress	(a) Optimise
	manon difference in a component	8. This form of to make ad Fig. 8
		a) Uniform
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O.ne	I SHINIAGAVATHI ME.	PRINCIPAL SRI BHARATHI ENGINEERING
CVI	SRIBHARATHI ENGINEERIN	COLLEGE FOR WOMEN
C/E	COLLEGE FOR WOMEN	Kalkkurchi - 622 303, Pudukkottai Dt.
. 3%	Kalkkurchi - 622 303, Pudukkottai I	

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	de Acasting of non and tarmsning 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	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 corre	osion?
a) Direct corrosion	c) Electrochemical corrosion
b) High temperature oxidation	d) Galvanic action theory

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## DEPARTMENT OF CIVIL ENGINEERING

2B(9977 HE3 75		(3) 125
<b>ACADEMIC YEAR</b>	2019-2020 / ODD SEM	ESTER
Name of the Student: D. Dhesi	kapaethi	Year/Sem: / /.
AU Register Number: 91261710	3002	ewowerauth tolkly of the
Value Added Course or	"Corrosion of RC	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	fconcrete
<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	
<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

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b) Galvanic	d) Stress
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a) Pt	(c) None
(b) Co	d) Can't decide
11 377 1 64 6 11	
	an be used for cathodic protection:
<ul><li>(a) Resources</li><li>b) Project duration time</li></ul>	c) Both resources and project duration time d) None of the above
o) Troject daration time	a) Note of the accident
A .	I in which cement reacts with water to form a hard, solid material?
a) Hydration	c) Carbonation
b) Oxidation	d) Decomposition
13. What is the maximum wa	ter to cement ratio for concrete to be considered high strength?
(a) 0.5	c) 0.7
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	and the analysis of the analys
Augustania augustania	einforcement in reinforced concrete?
<ul><li>a) Increases strength</li><li>b) Increases ductility</li></ul>	c) Increases durability (d) All of the above
b) mereases ductinity	d) All of the above
15. What is the process called	I in which steel reinforcement corrodes and deteriorates the concrete
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b) Chloride attack	(d) Corrosion
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b) 25 MPA	d) 35 MPA
	I in which the concrete surface is treated to increase its resistance to
water and other substance	
(a) Sealing	c) Coating
b) Curing	d) Surface Treatment
	one eligible is not the essent commentes of the Religible rent
	I in which the steel reinforcement is coated with a material to protect it
from corrosion?	THE PARTY OF THE P
a) Galvanizing  (b) Epoxy coating	©Painting d) Anodizing
(b) Epoxy coating	The first of the control of the cont
	position of the contract of th
	S. B. I. M. E. Rounn C. Commission of the commis
	mental (a)
ATHIME, Ph.O.	VARIALIHT: 2.10 Dr. S.THILAGAVATHI M.E., Ph.D., PRINCIPAL
	SPI BHARATHI ENGINEEDING
ENGINEERING	COLLEGE FOR WOMEN
	Kalkkurchi - 622 303, Pudukkottai Dt.

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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
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a) 100 kg	c) 250 kg
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consuming	conductivity of metals
b) Corrosion causes contamination of product	d) Corrosion causes leakage of toxic liquid or
•	gases
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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	1.075017103701	LAKSHMI A	TH/CIAIF	ATTENDAN	CE DETAILS	VAC-M	CQ 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	HECIAIC	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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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 8 019-20	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	8	AVATHI M.E.,P	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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PUDUKKOTTAI - 622 303