

DVV Clarifications

INDEX

3.3.3 Number of Books and Chapters in edited volumes/books published and papers published in National /International Conference proceedings per teacher during last five years

Academic Year: 2019-2020

Sl. No	Name of the teacher	Title of the book/chapters published	Title of the paper	Name of the publisher/ the conference	Year of publication	ISBN/ ISSN number of the proceeding	Page No From-to
1	Dr.R.Saravanan	Structural Design and Drawing	-	Lakshmi Publications Chennai	2020	978-93-87950-59-7	11-18
2	S.Shanmuga Priya	Cognitive Informatics and Soft Computing	Decision Support System for Deter-mining Academic Advisor Using Simple Additive Weighting.	Springer	2020.	978-981-15-1451-7	19-20
3	Dr. S. Sarojini Mary	-	Determination of Switching Angle from Inductance Profile of Converter Fed Switched Reluctance Generator in Wind Energy Conversion System.	First International Conference on Circuits, Signals, Systems and Securities	2020	-	21
4	G.NalinaKeerthana	-	A Block Chain Based Confidential Schema for Organized Data in Distributed Networks.	Velammal Institute of Technology, Chennai	2020	-	22
5	M.Kirubakaran	-	-	Wiley	2020	1520-6483	23
6	Dr.U.Suresh kumar	Power Electronics for Renewable Energy System	-	Lambart academic publication	2019	978-3-659-61401-9	24-26
7	Dr.U.Suresh kumar	Communication Network	-	Lambart academic publication	2019	978-3-659-61401-9	27-29

Sl. No	Name of the teacher	Title of the book/chapters published	Title of the paper	Name of the publisher/ the conference	Year of publication	ISBN/ ISSN number of the proceeding	Page No From-to
8	Dr.U.Suresh kumar	Principal of Management	-	Lambart academic publication	2019	978-3-659-61401-9	30-31
9	E.Muthukumaran	-	Optimal integration of distributed generation & capacitors in smart grid using particle swarm optimization.	International Conference Onadvanced Technologies in Electrical Engineering	2019	-	33
10	A.Belin Jude	-	Study of durability properties on concrete with steel slag composite	International conference on new scientific creation in engineering and technology	2019	2455-1457	34
11	Dr.R.Saravanan	Water Resources and irrigation Engineering	-	Lakshmi Publications, Chennai	2019	978-93-83103-61-4	35-46

n.24
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Academic Year: 2018 - 2019

Sl. No	Name of the teacher	Title of the book/chapters published	Title of the paper	Name of the publisher/ the conference	Year of publication	ISBN/ ISSN number of the proceeding	Page No From-to
12	Dr.R Saravanan	Concrete Technology	-	Suchitra Publications, Chennai	2018	978-81-932114-9-6	47-61
13	S.Shanmuga Priya	-	Home and office automation system using human activity recognition.	Communication & Signal Processing. (Added to IEEE Explore)	2018	-	62
14	S.Shanmuga Priya	-	The personal authentication and security enhancement for optimal strong password.	Cheran college of Engineering, Karur.	2018	-	63
15	Dr.K Geetha	-	A non-linear model for mouse pointing task movement time analysis based on both human and system effects.	Ranganathan Engineering College, Coimbatore	2018	-	64
16	M.Mohamed Faizal	-	Authority Identification and cashless fine system.	Sri Subramanya college of Engg and Technology, Palani.	2018	-	65
17	S.Shanmuga Priya	-	Efficient BWT and SWT based multilevel image segmentation for brain tumor detection in MR images.	Cheran college of Engineering, Karur.	2018	-	66
18	A.Barveen	-	BORDER ALERTROID: Mobile application for border alert and automatic mode conversion in mobile cloud environment.	Sri Subramanya college of Engineering and Technology, Palani.	2018	-	67

Sl. No	Name of the teacher	Title of the book/chapters published	Title of the paper	Name of the publisher/ the conference	Year of publication	ISBN/ ISSN number of the proceeding	Page No From-to
19	G.NalinaKeerthana	-	Automatic Drunken Drive Detection of Alcohol Craving & Mood Dysregulation.	Cheran college of Engineering, Karur.	2018	-	69
20	Dr.K.Geetha	-	Secure Balloting machine using finger print with Aadhar Verification.	St.Joseph's College of Engineering and Technology, Thanjavur.	2018	-	70
21	Dr.K.Geetha	-	Disease production based on retinal images using deep neural network.	Dhana lakshmi Srinivasan Engineering college, Perambalur.	2018	-	71
22	Dr.K.Geetha	-	A semantic web services platform to support disaster management.	Kingscollege of Engg, Thanjavur.	2018	-	72
23	A.Joshualssac	-	Application based human tracking using global position system.	Subramanya college of Engineering and technology palani.	2018	-	73
24	A.Barveen	-	Optimizing traffic signal settings for emergency vehicle.	St.Joseph's College of Engineering and Technology, Thanjavur.	2018	-	74
25	M.Dhandayutha bani	-	Enhancement of heat transfer with PCM using Graphite Nanoparticles in Heat Exchanger.	TRP Engineering College, Trichy.	2018	-	75
26	S.Roseline	-	Evaluation of Mechanical Properties and stability of AL 6061 with addition of ZrO ₂ and AL ₂ O ₃ .	ICONNECT2K18	2018	K.Ramakrishna n college of Technolgy. Trichy	76

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Academic Year: 2017 - 18

Sl. No	Name of the teacher	Title of the book/chapters published	Title of the paper	Name of the publisher/ the conference	Year of publication	ISBN/ ISSN number of the proceeding	Page No From-to
27	Dr.A.NaveenSait	Automobile Engineering	-	Maruthi Publisher, Chennai	2017	978-93-80757-66-1	77-90
28	Dr.A.NaveenSait	Basic Civil and Mechanical Engineering	-	Srikrishna Publisher, Chennai	2017		91-102
29	Dr.A.NaveenSait	Mechatronics	-	Srikrishna Publisher, Chennai	2017	978-93-85-364-74-7	103-114
30	Dr.A.NaveenSait	Manufacturing Technology-1	-	Srikrishna Publisher, Chennai	2017	978-93-85-364-74-7	115-129
31	Dr.A.NaveenSait	Unconventional Machining Processes	-	Maruthi Publisher, Chennai	2017	975-93-85-264-18	130-140
32	Dr.R.Saravanan	Repair and Rehabilitation of Structures		Lakshmi Publications, Chennai	2017	978-93-83103-74-4	141-157
33	Dr.R.Saravanan	Municipal Solid Waste Management		Lakshmi Publications, Chennai	2017	978-93-83103-65-2	158-172
34	Dr.R.Saravanan	Railways, Airports and Harbour Engineering		Suchitra Publications, Chennai	2017	978-81-932114-7-2	173-189
35	A.Belin Jude		Performance characteristics of hybrid fibre concrete using waste material	International conference on emerging and sustainable technologies for infrastructure system	2017	2395-0056	190
36	T.Barkavi.	-	A Decision Support System for the Condition Assessment of Distressed Concrete Buildings.	AEI 2017, Oklahoma, USA	2017	9780784480502	191
37	A.BelinJude.	-	Influence of mineral organized on strength and durability properties of concrete.	International conference on Recent Innovations in Engineering and Technology, Aurora's Scientific, Technological and Research Academy, Hyderabad	2017		192

Sl. No	Name of the teacher	Title of the book/chapters published	Title of the paper	Name of the publisher/ the conference	Year of publication	ISBN/ ISSN number of the proceeding	Page No From-to
38	U.Bala Vignesh.	-	Influence of mineral organized on strength and durability properties of concrete.	International conference on Recent Innovations in Engineering and Technology, Aurora's Scientific, Techno-logical and Research Academy, Hyderabad	2017	-	193
39	M.Jeganraj.	-	Influence of mineral organized on strength and durability properties of concrete.	International conference on Recent Innovations in Engineering and Technology, Aurora's Scientific, Technological and Research Academy, Hyderabad	2017	-	194
40	A.BelinJude.	-	Effect of concrete with Engineered cementations composite using polypropylene fibre.	International conference on Recent Innovations in Engineering and Technology, Aurora's Scientific, Technological and Research Academy, Hyderabad	2017	-	195
41	V.Venkatesh	-	Effect of concrete with Engineered cementitious composite using polypropylene fibre.	International conference on Recent Innovations in Engineering and Technology, Aurora's Scientific, Technological and Research Academy, Hyderabad	2017	-	196
42	E.Santhosh Kumar	-	Effect of concrete with Engineered cementitious composite using polypropylene fibre.	International conference on Recent Innovations in Engineering and Technology, Aurora's Scientific, Technological and Research Academy, Hyderabad	2017	-	197

Sl. No	Name of the teacher	Title of the book/chapters published	Title of the paper	Name of the publisher/ the conference	Year of publication	ISBN/ ISSN number of the proceeding	Page No From-to
43	S.Mohana	-	Heuristics For Privacy Preserving Data Mining: An Evaluation.	Bharath University Chennai.	2017	-	198
44	S.Shanmuga Priya	-	Robust cell detection of Histopathological brain tumor images using segmentation and edge detection.	Ranganathan Engineering College, Coimbatore.	2017	-	199
45	M.Jilsath Begum	-	Fast and Efficient Data Storage on Cloud using HyRD.	SSMIET, Dindigul.	2017	-	200


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Academic Year: 2016 - 17

Sl. No	Name of the teacher	Title of the book/chapters published	Title of the paper	Name of the publisher/ the conference	Year of publication	ISBN/ ISSN number of the proceeding	Page No From-to
46	A.BelNJude	-	Performance characteristics of hybrid fibre concrete using waste material.	International conference on emerging and sustainable technologies for infrastructure system	2016	2395-0056	201
47	T.Barkavi.	-	Assessment of Damage in Concrete Beam using Fuzzy Inference.	5 th Inter-national Conference on Civil Engineering and Urban Planning, Xian-China, World Scientific PublicationCEUP 2016, Xian, China	2016	978-9813225220	202
48	M.Jilsath Begum	-	Discovering content similarity on demand data access in IAAS cloud.	Theni Kammavar Sangam college of technology, Theni.	2016		203
49	G.NalinaKeerthana	-	Secure Transmission Against Provenance Forgery and Packet Drop Attack in Wireless Sensor Networks.	Ranganathan Engineering College	2016		204
50	G.NalinaKeerthana	-	Improving Selfish Node Detection in MANET Using A Collaborative Watch Dog.	Ranganathan Engineering College	2016		205
51	Dr.L.Jebaraj	-	New Variable Frequency Inverted Sine Carrier PWM Modulated Semi - Cross Switched Multilevel Inverter Topologies.	ICCPCT	2016	978-1-5090-1277-0	206

Year: 2015 - 16

Sl. No	Name of the teacher	Title of the book/chapters published	Title of the paper	Name of the publisher/ the conference	Year of publication	ISBN/ ISSN number of the proceeding	Page No From-to
52	Dr.U.Suresh kumar	Basic Electrical and Electronics Engg	-	Charulatha publications	2015	13:978-81-933409-6-7	207-209
53	Dr.U.Suresh kumar	Circuit Theory	-	Charulatha publications	2015	13:978-81-933409-6-7	210-212
54	Mr.D.Tamilselvan	-	Input Current Ripple Reduction Based Boost Converter Through T-Filter Network.	Karpagam College of Engg,	2015	978-1-4799-6818-3/15	213
55	Mr.S.Samayasanjeevi	-	Comparison and Analysis of THD minimization in three phase flying capacitor.	Mount zion college of engineering and technology	2015	-	214
56	A.Abirami	-	Talking Hertz Frequent Messgerat.	KarpagaVinayaga College of Engineering and Technology	2015	-	215
57	S.Roseline	--	Evaluation of Mechanical Properties of AL 6061 Metal matrix composites reinforced with fused zirconia alumina.	INCETET 2015	2015	Society of Engineering and technology & Newton tech Solution	216
58	L.S.Narendhira.	-	Innovative maintenance approach to improve quality and safety using type II fuzzy logic system will TRIZ evaluation.	ICQTI -2015 AUT	2015	Anna University BIT Campus, Trichy	217
59	L.S.Narendhira.	--	Quality Improvements through innovative frictional welding process for tube-to-tube plate configuration.	ICQTI -2015 AUT	2015	Anna University BIT Campus, Trichy	218
60	L.S.Narendhira.	--	Fuzzy based soft computing Technique for modeling of non linear process.	ICAAET -2015	2015	Syed Ammal Engineering college,Ramnad.	219

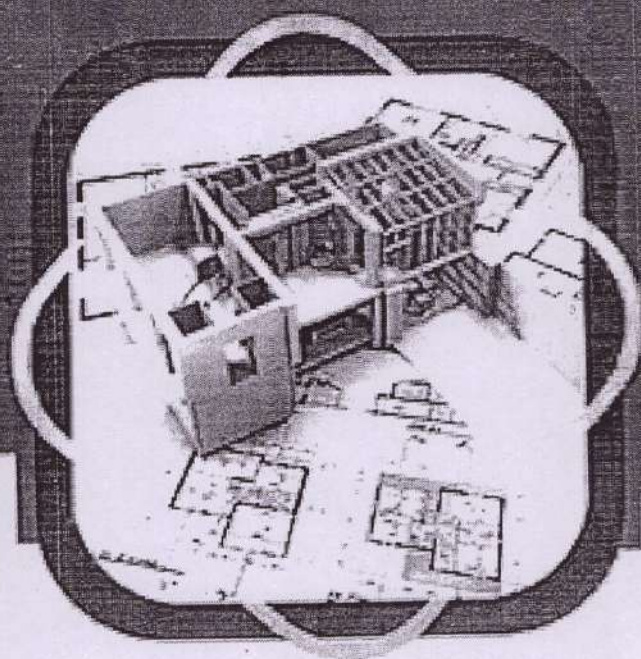
Sl. No	Name of the teacher	Title of the book/chapters published	Title of the paper	Name of the publisher/ the conference	Year of publication	ISBN/ ISSN number of the proceeding	Page No From-to
61	Dr.L.Jebaraj	-	A NEW Multi Level DC Link Inverter Topology with Variable Frequency Inverted Sine Carrier PWM under Equal Switching Transition.	ICIECS'15	2015	978-1-4799-6818-3	220


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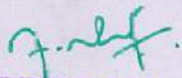
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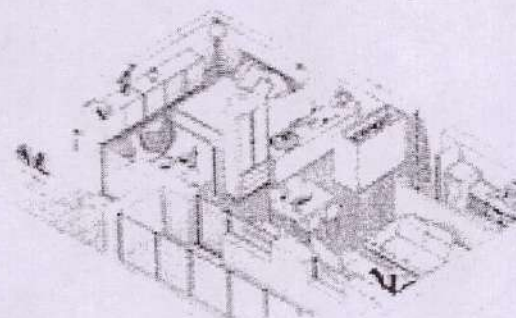
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First Edition: October 2020

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CONTENTS

UNIT I

RETAINING WALLS	1.1 - 1.58
1.1. Introduction	1.1
1.2. Types of Retaining Walls.....	1.1
1.3. Gravity Retaining Wall	1.2
1.4. Semi-Gravity Retaining Walls.....	1.2
1.5. Cantilever Retaining Walls	1.3
1.5.1. Elements of Cantilever Retaining Wall.....	1.4
1.6. Counter Fort Retaining Wall.....	1.4
1.6.1. Elements of Cantilever Retaining Wall.....	1.5
1.7. Buttressed Retaining Walls.....	1.5
1.8. Anchored Retaining Wall.....	1.6
1.9. Crib Walls.....	1.7
1.10. Cantilever Retaining Wall.....	1.8
1.11. Counter Fort Retaining Wall.....	1.11
Solved Problems	1.14
Review Questions	1.57


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C.2

UNIT II

FLAT SLAB AND BRIDGES

2.1 - 2.54

2.1. Introduction.....	2.1
2.2. Design Procedure for Flat Slab (with drop)	2.2
2.3. Design of Flat Slab (without drop)	2.4
2.4. Design of Reinforced Concrete Solid Slab Bridge	2.7
2.5. Design of Foot Over Bridge (Steel).....	2.9
Design of Flat Slab (with drop).....	2.14
Design of Reinforcement (Middle Strip).....	2.19
Design of Flat Slab (without drop)	2.20
Design of Reinforced Concrete Solid Slab Bridge	2.28
Design of Foot Over Bridge (Steel).....	2.36
Review Questions	2.54

UNIT III

LIQUID STORAGE STRUCTURES

3.1 - 3.67

3.1. Introduction.....	3.1
3.2. Tank on Ground.....	3.2
3.2.1. RCC Rectangular Open Tank on Ground.....	3.2
RCC Circular Tank on Ground (Flexible Base)	3.4
RCC Circular Tank on Ground (Rigid Base)	3.5
3.3. Elevated Circular	3.7

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3.3.1.

3.4. Un

3.4.1.

3.5. Ho

3.5.1

Solved

Elevat

Under

Review

INDU

4.1.

4.2.

4.3.

4.3

4.4.

4.5.

4.6.

4.

4.

4.

4.

3.3.1. RCC Elevated Circular Water Tank	3.7
3.4. Underground Rectangular Tanks	3.11
3.4.1. RCC Underground Rectangular Tanks.....	3.11
3.5. Hemispherical Bottomed Steel Water Tank.....	3.13
3.5.1. Design of Hemispherical Bottomed Steel Water Tank	3.13
Solved Problems	3.16
Elevated Water (Circular)	3.32
Underground Tanks.....	3.48
Review Questions	3.67

UNIT IV

INDUSTRIAL STRUCTURES	4.1 - 4.65
4.1. Introduction.....	4.1
4.2. Structural Steel Framing.....	4.1
4.3. Steel Roof Trusses	4.2
4.3.1. Types of Truss	4.2
4.4. Roofing Elements	4.3
4.5. Beam Columns	4.4
4.6. Buckling Class of Cross Section.....	4.5
4.6.1. Slenderness Ratio	4.5
4.6.2. Actual Length	4.5
4.6.3. Effective Length	4.6
4.6.4. Appropriate Radius of Gyration	4.6


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4.7. Design of Single Section and Compound Angles	4.6
4.7.1. Continuous Members	4.7
4.7.2. Discontinuous Members	4.7
4.8. Design Procedure for Steel Roof Trusses	4.9
4.9. Design Procedure for Roofing Element	4.13
4.9.1. Design the Economical Purlin for a Roof Truss of an Industrial Building	4.13
4.9.2. Design Procedure for a Knee Brace, Column, Girt Angle, Columns Base, and Pedestal	4.16
4.10. Design of Beam-Column	4.21
Solved Problems	4.24
Knee Brace	4.46
Beam Column	4.59
Review Questions	4.65

UNIT V

GIRDERS AND CONNECTIONS 5.1 - 5.65

5.1. Plate Girders	5.1
5.1.1. Introduction	5.1
5.1.2. Elements of Plate Girder	5.2
5.1.3. Types of Plate Girders	5.5
5.1.4. Steps Involved in the Design of Plate Girders	5.7
Solved Problems	5.8


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5.2. Design of Gantry Girder.....	5.30
5.2.1. Types of Gantry Girders and Crane Rails	5.32
5.2.2. Limitations on Vertical Deflection	5.32
5.2.3. Steps to be Followed in the Design of Gantry Girder	5.33
Solved Problems	5.33
5.3. Design of Eccentric Shear and Moment Resisting Connections.....	5.54
5.3.1. Eccentric Connection with Bearing Bolts	5.55
5.3.2. When Moment is in the Plane of Bolts.....	5.55
Solved Problems	5.57
Review Questions	5.64
Important Solved Problems	S.1 - S.28
Model Question Papers.....	MQ.1 - MQ.6


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Decision Support System for Determining Academic Advisor Using Simple Additive Weighting



M. Sivaram, S. Shanmugapriya, D. Yuvaraj, V. Porkodi, Ahmad Akbari,
Wahidah Hashim, Andino Maselena and Miftachul Huda

Abstract In every college there is always an Academic Advisor. Every student studying in a tertiary institution must have an Academic Advisor. Higher education is also a continuation of secondary education which is organized to prepare students to become members of the community who have the ability, not only in the academic field but also in all fields where students or student forms a form of agent of change, agent of control, and iron stock. The problem that occurs in determining the Academic Advisor is the need for Academic Advisors for students or students at STMIK Pringsewu Lampung. Where the parties concerned are still confused in determining the Academic Advisor, who is eligible to be an Academic Advisor? This problem can be solved by the method of saw in determining criteria and decision-making. This method will give an alternative weighting where the biggest weight is the alternative choice who will be determined to be Academic Supervisor in STMIK Pringsewu Lampung College.

Keywords Decision support system · Simple additive weighting · Academic advisor

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149


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20

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held on 24-25 November 2020 at RMIT University, Melbourne



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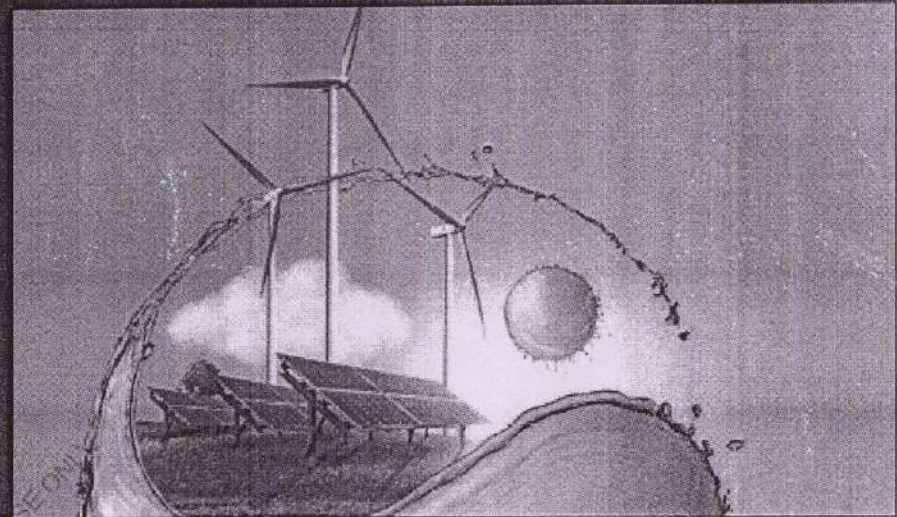
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Developing renewable energy technologies that exploit the sun, the wind, and geothermal energy is critical to addressing concerns about climate change and some environmental issues. However, using renewable energy sources will not eliminate all environmental concerns. Although renewable energy sources produce relatively low levels of Green House gas emissions and conventional air pollution, manufacturing and transporting them will produce some emissions and pollutants. The production of some photovoltaic (PV) cells, for instance, generates toxic substances that may contaminate water resources. Renewable energy installations can also disrupt land use and wildlife habitat, and some technologies consume significant quantities of water. To develop sound policies Policy makers must understand the relative environmental impacts of alternative energy sources, including how the impacts of renewable energy technologies compare to those of fossil-fuel technologies and to opportunities for improvements in energy efficiency. Understanding the potential environmental impacts of renewable energy technologies is also essential for identifying and pursuing design, manufacturing



Dr. Umaiyadoss Sureshkumar



i am Dr.U.Sureshkumar, working as professor, in
EEE/MJET, Tiruchi-07. I have more than 23 yrs of
experiences as Teaching as well as Industries. I have
completed my Research work in Hybrid renewable
energy resources.



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Power Electronics for Renewable Energy System

Electrical machines for Renewable Energy, Power
converters, analysis of wind and PV systems,

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UNIT I INTRODUCTION

4

Environmental aspects of electric energy conversion: impacts of renewable energy generation on environment (cost-GHG Emission) - Qualitative study of different renewable energy resources: Solar, wind, ocean, Biomass, Fuel cell, Hydrogen energy systems and hybrid renewable energy systems.

UNIT II ELECTRICAL MACHINES FOR RENEWABLE ENERGY CONVERSION

35

Reference theory fundamentals-principle of operation and analysis: IG, PMSG, SCIG and DFIG.

UNIT III POWER CONVERTERS

68

Solar: Block diagram of solar photo voltaic system -Principle of operation: line commutated converters (inversion-mode) - Boost and buck-boost converters- selection of inverter, battery sizing, array sizing
Wind: Three phase AC voltage controllers- AC-DC-AC converters: uncontrolled rectifiers, PWM Inverters, Grid Interactive Inverters-matrix converters.

UNIT IV ANALYSIS OF WIND AND PV SYSTEMS

102

Stand alone operation of fixed and variable speed wind energy conversion systems and solar system- Grid connection Issues -Grid integrated PMSG, SCIG Based WECS, grid Integrated solar system

UNIT V HYBRID RENEWABLE ENERGY SYSTEMS

130

Need for Hybrid Systems- Range and type of Hybrid systems- Case studies of Wind-PV Maximum Power Point Tracking (MPPT).

TEXT BOOK:

1. S. N. Bhadra, D.Kastha, S.Banerjee, "Wind Electrical Systems", Oxford University Press, 2005.
2. B.H.Khan Non-conventional Energy sources Tata McGraw-hill Publishing Company, New Delhi, 2009.

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1. Rashid .M. H "power electronics Hand book", Academic press, 2001.
2. Ion Boldea, "Variable speed generators", Taylor & Francis group, 2006.
3. Rai. G.D, "Non conventional energy sources", Khanna publishes, 1993.
4. Gray, L. Johnson, "Wind energy system", prentice hall inc, 1995.
5. Andrzej M. Trzynadlowski, 'Introduction to Modern Power Electronics', Second edition, wiley India Pvt. Ltd, 2012.

2


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An preliminary course on analog and digital communications is basic to the under-graduate program in electrical engineering. This course is typically obtainable at the low-grade level. Classically, it is understood that the student has the environment in the coal, electronics, signals and systems, and perhaps prospect theory, the preliminary manner in brain scenery of this path, a textbook optional for the course must be easy to read precise, and hold an profusion of perceptive examples, problems and computer experiments. These objectives of the book are Wanted to speed up the rudiments of knowledge or communication systems at preliminary level and in an effectual way. This book has been written with all of these objectives in mind. Given the mathematical nature of communication theory, it is quite easy for the reader to miselase view of the practical side of communication systems. Right through the book, we have made a particular effort not to fall into this ensnare. We have done this by touching through the conduct of the subject in an methodical method, always irritating to keep the mathematical behavior at an effortless-to-seize level and also pointing out practicals



Dr. Umaiyadoss Sureshkumar

Communication network

from
Fundamental of communication network/Anna
University,chennai



I am Dr. U.Sureshkumar working as a Professor/HOD in EEE/MIET,Tiruchi-07,TN,India, BE in Electrical and Electronics in Thyagarajar College of Engineering , Applied ME in Electronics in Madurai Kamarajar University and completed his Ph.D. In Thyagarajar College of Engineering , i have more than 2 decade of experience as Teaching /industries



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FUNDAMENTALS AND LINK LAYER

1.1. OVERVIEW OF DATA COMMUNICATIONS

A network is a set of devices (also referred to as nodes) connected by communication links. A node can be a computer, printer or any other device capable of sending data and receiving data generated by other nodes on the network.

Data communication is the exchange of data between two devices via some form of transmission medium. The effectiveness of a data communication system depends on;

- (i) **Delivery:** Data must be delivered to the correct destination. Data must be received by the intended device or user and only by that device or user.
- (ii) **Accuracy:** The system must deliver the data without any change. Data that have been altered in transmission and left uncorrected are unusable.
- (iii) **Timeliness:** The system must deliver the data in time. The system must deliver the audio or video data as they are produced, in the same order that they are produced, and without significant delay. This kind of delivery is called real-time transmission.
- (iv) **Jitter:** Jitter refers to the variation in the packet arrival time. It is the uneven delay in the delivery of audio or video packets.

1.1.1 Components

A data communication system consists of five components. They are

- (i) **Message:** The message is the information or data to be communicated. Some forms of data representations are text, number, images, audio and video.
- (ii) **Sender:** The sender is a device that sends the message.
- (iii) **Receiver:** The receiver is a device that receives the message, sent by the sender.
- (iv) **Medium:** The medium is a physical path through which the message can be passed between the sender and the receiver.
- (v) **Protocol:** The protocol is a set of rules which governs the data communication. Without the protocol, two systems can be connected but not communicating. The key elements of a protocol are syntax, semantics and timing.

Before getting ahead of ourselves, just what is management, let alone principles of management? A manager's primary challenge is to solve problems creatively, and you should view management as "the art of getting things done through the efforts of other people. The principles of management, then, are the means by which you actually manage, that is, get things done through others—individually, in groups, or in organizations. Formally defined, the principles of management are the activities that "plan, organize, and control the operations of the basic elements of [people], materials, machines, methods, money and markets, providing direction and coordination, and giving leadership to human efforts, so as to achieve the sought object of the enterprise." The fundamental notion of principles of management was developed by French management theorist Henri Fayol (1841–1925). He is credited with the original planning-organizing-leading-controlling framework (P-O-L-C), which, while undergoing very important changes in content, remains the dominant management framework in the world.



Dr. Umalyadoss Sureshkumar

PRINCIPLES OF MANAGEMENT

INTRODUCTION TO MANAGEMENT AND
ORGANIZATIONS, PLANNING, ORGANIZING,
DIRECTING, CONTROLLING



I am Dr. Sureshkumar as professor & HOD in EEE at MIET, Tiruchi. I have well experience in POM for the two years in U.G Level especially for engineering background students.



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ICNSCET19- International Conference on New Scientific Creations in Engineering and Technology

STUDY OF DURABILITY PROPERTIES ON CONCRETE BY USING INDUSTRIAL WASTE

A.Belin jude¹, G.Sathiya priya²

¹ Assistant professor, Department of civil engineering, M.I.E.T. Engineering College

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Abstract -This project report the effect of concrete by using copper slag and recycled coarse aggregates are replaced. In this project the recycled coarse aggregates are replaced with 0%, 10%, 20% & 30% to coarse aggregate with the treatment of NaOH-2N for 24 hours and copper slag as fine aggregate replacement in range of 0%, 20%, 40% & 60% by weight of fine aggregate. If the durability and strength is the most important criteria for the design of reinforced concrete structure. In this project work the concrete grade M30 was selected and IS method was used for mix design. The properties of material for cement, fine aggregate, coarse aggregate, recycled coarse aggregate and copper slag were studied for mix design. The various strength concrete like compressive and split tensile strength were studied for various replacements percentages. For the durability studies the test specimens are subjected to sulphate attack, chloride attack and water absorption test on concrete is checked.

Keywords—Cement, copper slag, Recycled coarse aggregate, NaOH-2N, Durability.

I. INTRODUCTION

In the present scenario as a result of continuous growth in population, rapid industrialization, the rate of discharge of pollutants in to the atmosphere has also increased. If the copper slag is one of the industrial waste which is comes out from blast furnace during metal extraction process. However, copper slag can be used in many beneficial ways. It can be used as replacement of fine aggregates in concrete construction, the slag serves as fine, or binding agent which helps to hold large gravel particles within the concrete structures. Concrete is the one of the major construction materials being used worldwide. The aggregate type utilized are either coarse aggregates (with particle size more than 4.75 mm or fine aggregates (with particle size less than 4.74 mm) the aggregate which are used in concrete are obtained either from natural sources or by crushing large size rocks. Coarse aggregates are bound with cement paste during the hydration process to form cement concrete where s fine aggregates are utilized to fill the gaps between the coarse aggregate particles. Coarse aggregate recycling is now a day's popular most of concrete wastes were dumped in low lying lands to increase the level of ground. But when environment is taken into consideration recycled coarse aggregate promotes their reuse and lowers the construction cost.

The main objective of this paper is to be determine the durability properties of concrete the strength parameters of M30grade of concrete when made with replacement of fine aggregate with copper slag and coarse aggregate with recycled coarse aggregates. Compressive strength, split tensile strength and flexural strength of concrete is evaluated with different percentage replacement of fine aggregate in copper slag and coarse aggregate in recycled coarse aggregate. There is need to discover a cost

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ATEE169

OPTIMAL INTEGRATION OF DISTRIBUTED GENERATION & CAPACITORS IN SMART GRID USING PARTICLE SWARM OPTIMIZATION

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¹Assistant Professor, Department of Electrical and Electronics Engineering
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Abstract:

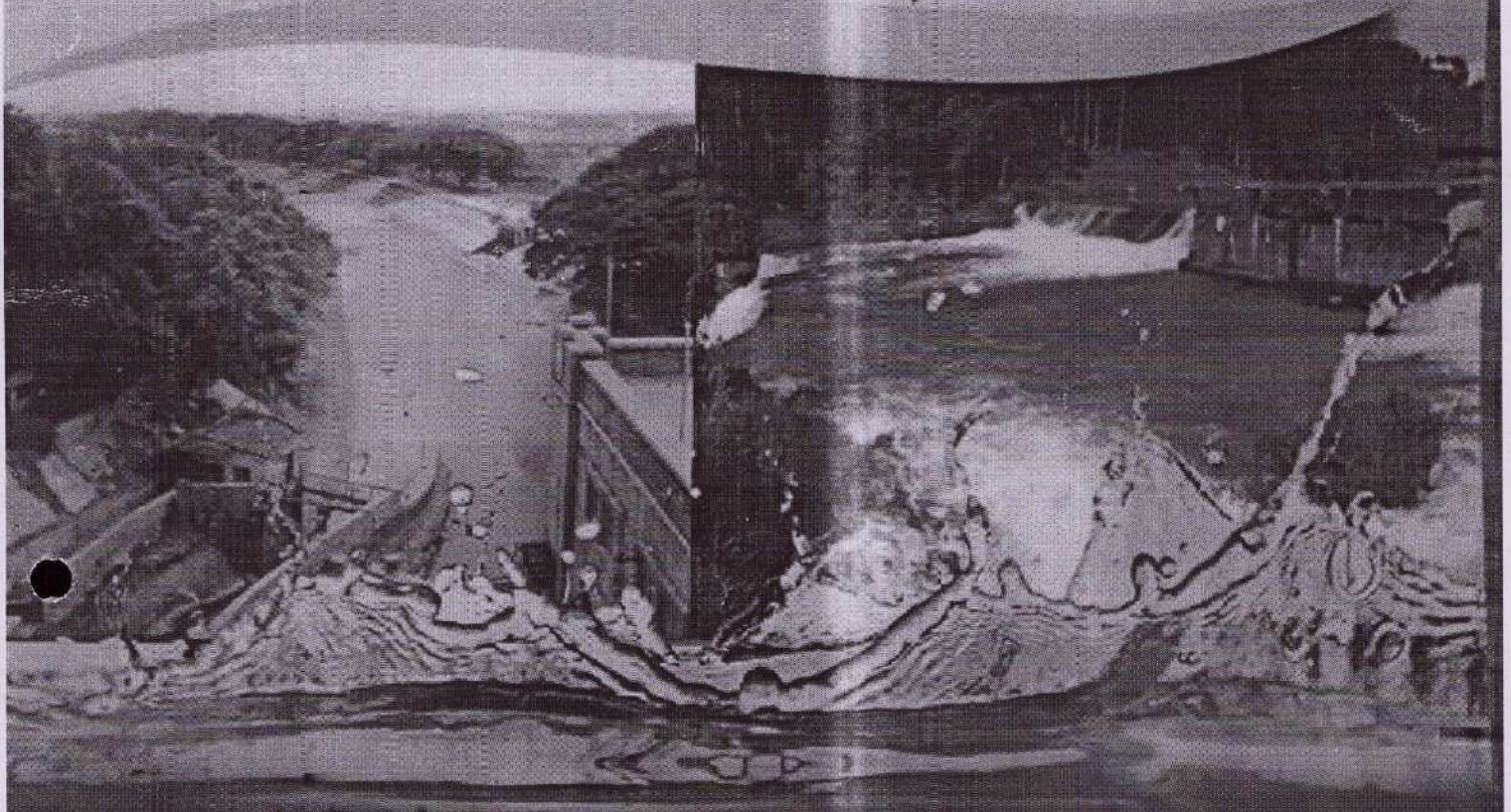
Distributed generation (DG) places the major role in smart grid environment. It has become mandatory to allow for a seamless integration of Distributed generation and capacitors to improve the performance of smart grid, while still meeting increasing or decreasing demands with minimum operating cost. The objective of this paper is to minimize the real and reactive power loss and to improve the voltage profile in the distribution system. A Fuzzy logic technique has utilized to identify the weak bus for DG and capacitor placement. After identifying the weak bus, the particle swarm optimization technique is used for sizing Distribution Generation and capacitor with minimization of power loss in the smart distribution system with dynamic load. The variable load is done by increasing and decreasing the test system load by 25%, 50% of the base case. Comparison of results before and after the DG and capacitor installation for varying load has been carried out. The results prove the reduction of power loss and improvement in voltage profile. IEEE 33 bus system demonstrates the applicability of the proposed method.

Keywords: Particle swarm Optimization, Distributed Generation, Smart grid

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As per the Latest Syllabus of Anna University, Chennai
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by Dr. R. SARAVANAN
Er. R. DINESH KUMAR
Mrs. A. SURIYA

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CONTENTS

UNIT I

WATER RESOURCES	1.1 – 1.86
1.1. Introduction	1.1
1.2. Water Resources	1.3
1.2.1. General	1.3
1.2.2. Water Resources Survey	1.6
1.3. Water Resources of India	1.7
1.3.1. General	1.7
1.3.2. Water Supply and Demand Gap	1.8
1.3.3. Environmental Challenges	1.9
1.3.4. Sources of Fresh Water in India	1.10
1.3.5. Variations in Rainfall	1.10
1.3.6. Overall Water Availability	1.12
1.4. Water Resources of Tamil Nadu	1.14
1.4.2. Rainfall	1.15
1.4.3. Surface Water Resources	1.16
1.4.4. Ground Water Resources	1.16


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1.4.5. State Water Policy	1.19
1.5. Water Resources Planning	1.20
1.5.1. General	1.20
1.5.2. Stages in Water Resources Planning	1.23
1.6. Irrigation Water Requirements	1.25
1.6.1. General	1.25
1.6.2. Irrigation Requirements	1.26
1.6.3. Soil-Water Balance	1.27
1.7. Drinking Water Requirements	1.34
1.7.1. General	1.34
1.7.2. Water Quantity Estimation	1.35
1.8. Reservoirs	1.39
1.8.1. General	1.39
1.8.2. Classification of Reservoirs	1.42
1.8.3. Multi Objective of Reservoirs	1.43
1.9. Fixation of Storage Capacity	1.44
1.9.1. General	1.44
1.9.2. Terms in Storage Capacity of Reservoirs	1.44
1.9.3. General Aspects of Storage	1.50
1.10. Principles of Operation of Reservoirs	1.52
1.10.1. General	1.52
1.10.2. Single Purpose Reservoirs	1.52

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1.10.3. Multi Purpose Reservoirs	1.54
1.11. Factors for the Design of Storage Capacity of Reservoirs	1.57
1.12. Flood Control Works.....	1.63
1.13. Flood Levees and Flood Walls.....	1.64
1.13.1. General	1.64
1.14. Structural Criteria for Levees and Flood Walls	1.65
1.14.1. General	1.65
1.14.2. Criteria for Levees.....	1.65
1.14.3. Criteria for Flood Walls	1.67
1.15. Location of Levees	1.68
1.16. Embankment Design	1.69
1.16.1. Design of High Flood Level (HFL).....	1.71
1.16.2. Free Board	1.72
1.16.3. Top Width	1.73
1.16.4. Hydraulic Gradient.....	1.73
1.16.5. Side Slope.....	1.74
1.17. Interior Drainage	1.75
1.18. Levee Maintenance	1.76
1.19. Safety Measures in Design.....	1.76
Two Mark Questions with Answers.....	1.77
Review Questions.....	1.85


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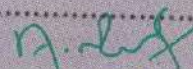
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UNIT II

WATER RESOURCE MANAGEMENT

2.1 – 2.96

2.1. Introduction	2.1
2.2. Economics of Water Resources Planning	2.2
2.2.1. General	2.2
2.2.2. Periods of Time	2.3
2.2.3. Economic Analysis.....	2.4
2.2.4. Discounting Factors.....	2.5
2.2.5. Discounting Techniques.....	2.8
2.3. National Water Policy	2.12
2.3.1. General	2.12
2.3.2. National Water Policy Formulation	2.13
2.3.3. Major Provisions of National Water Policy	2.14
2.4. National Water Policy - 2012.....	2.14
2.4.1. Introduction	2.14
2.4.2. Present Scenario of Water Resources and Management.....	2.15
2.4.3. Basic Principles of Water Resources Public Policies.....	2.17
2.4.4. Water Framework Law.....	2.19
2.4.5. Uses of Water	2.20
2.4.6. Adaptation to Climate Change	2.21


 PRINCIPAL

Contents

2.4.7. Enhancing Water Available for use	2.22
2.4.8. Demand Management and Water Use Efficiency	2.23
2.4.9. Water Pricing	2.24
2.4.10. Conservation of River Corridors, Water Bodies and Infrastructure..	2.25
2.4.11. Project Planning and Implementation	2.27
2.4.12. Management of Flood & Drought	2.28
2.4.13. Water Supply and Sanitation	2.29
2.4.14. Institutional Arrangements	2.31
2.4.15. Trans-Boundary Rivers	2.32
2.4.16. Database and Information System	2.32
2.4.17. Research & Training Needs	2.33
2.4.18. Implementation of National Water Policy	2.34
2.5. Draft National Water Policy (2012)	2.34
2.5.1. Salient Features of Revised Draft National Water Policy – 2012	2.34
2.5.2. Comparative Details of National Water Policies	2.36
2.6. Water Use	2.47
2.6.1. General	2.47
2.6.2. Consumptive use of Water	2.47
2.6.3. Non-Consumptive use of Water	2.49
2.7. Water Quality	2.51
2.7.1. General	2.51

3.15. Estimation of Consumption use of Water	3.25
Problems on Irrigation Efficiencies.....	3.40
Problems on Field Capacity	3.43
Problems on Consumptive Water Use	3.48
Two Mark Questions with Answers.....	3.52
Review Questions.....	3.56

UNIT IV

CANAL IRRIGATION

4.1 – 4.94

4.1. Introduction	4.1
4.2. Dams.....	4.2
4.2.1. Different Parts and Terminologies of Dams	4.2
4.2.2. Classification of Dams	4.4
4.2.3. Selection of the Type of Dam	4.11
4.2.4. Selection of Suitable Location for Dam.....	4.14
4.3. Gravity Dam.....	4.15
4.3.1. Forces on a Gravity Dam.....	4.16
4.3.2. Causes of Failure of Earth Dams and its Remedies	4.21
4.3.3. Advantages of Gravity Dam.....	4.24
4.3.4. Disadvantages of Gravity Dam	4.25
4.3.5. Elementary Profile of Gravity Dam	4.25

4.4. Diversion Head works.....	4.28
4.4.1. Objective of Diversion Head Works.....	4.28
4.4.2. Selection of Site for Diversion Head Works.....	4.28
4.4.3. Weir and Barrage	4.29
4.4.4. Layout of a Diversion Head Works and its Components.....	4.35
4.5. Canal Irrigation	4.50
4.5.1. Distribution Systems for Canal Irrigation.....	4.50
4.5.2. Classification of Canal	4.52
4.6. Canal Fall	4.53
4.6.1. Necessity of Canal Falls.....	4.53
4.6.2. Types of Canal Falls.....	4.55
4.7. Cross Drainage Works	4.60
4.7.1. Necessity of Cross-Drainage Works	4.60
4.7.2. Types of Cross-Drainage Works.....	4.61
4.8. Canal Regulators	4.67
4.9. Canal Escapes.....	4.69
4.9.1. Types of Canal Escapes.....	4.70
4.10. Canal Outlets/Modules.....	4.71
4.10.1. Requirements of a Good Module	4.71
4.10.2. Types of Outlets/Modules	4.72
4.11. Canal Alignment	4.74

4.11.1. Factors to be Considered for Canal Alignment	4.74
4.11.2. Types of Canal Alignment	4.75
4.12. Canal Lining	4.78
4.12.1. Types of Canal Linings	4.79
4.13. Canal Design	4.81
Two Mark Questions with Answers	4.89
Review Questions	4.93

UNIT V

IRRIGATION METHODS AND MANAGEMENT 5.1 – 5.80

5.1. Introduction	5.1
5.2. System of Irrigation	5.2
5.2.1. Lift Irrigation	5.2
5.2.2. Tank Irrigation	5.4
5.2.3. Flow Irrigation	5.5
5.3. Methods of Distribution of Irrigation Water	5.6
5.3.1. Surface Method of Irrigation	5.7
5.3.2. Sprinkler Irrigation Method	5.14
5.3.3. Drip Irrigation Method	5.22
5.3.4. Well Irrigation	5.23
5.4. Tube Wells	5.24

5.4.1. Based on Entry of Water	5.25
5.4.2. Based on Method of Construction.....	5.29
5.4.3. Based on Depth	5.34
5.4.4. Based Aquifer Characteristics.....	5.38
5.5. Open Wells.....	5.41
5.5.1. Open wells in unconsolidated formation classified as	5.43
5.5.2. Open wells in hard rock formation.....	5.47
5.6. Micro Irrigation	5.50
5.6.1. Need of Micro Irrigation	5.51
5.6.2. Benefits of Micro-Irrigation	5.51
5.6.3. Disadvantages of Micro Irrigation	5.52
5.6.4. Micro Irrigation Systems.....	5.52
5.6.5. Scaling up of Micro-Irrigation	5.53
5.7. Irrigation Scheduling.....	5.53
5.8. Participatory Irrigation Management (PIM)	5.56
5.8.1. Need for this Project.....	5.57
5.8.2. Project Objectives	5.57
5.9. Case Study.....	5.59
5.10. Planning and Development of Irrigation Projects.....	5.60
5.11. Irrigation Water Management	5.62
5.12. Need for Optimization of Irrigation Water Management.....	5.65

C.12

5.13. Minimization of Irrigation Losses.....	5.65
5.14. Evaluation of Irrigation System	5.67
5.15. On Farm Development (OFD) works.....	5.68
5.16. Water Users Association (WUA).....	5.73
Two Mark Questions with Answers.....	5.76
Review Questions.....	5.79
Model Question Papers	MQ.1 – MQ.10


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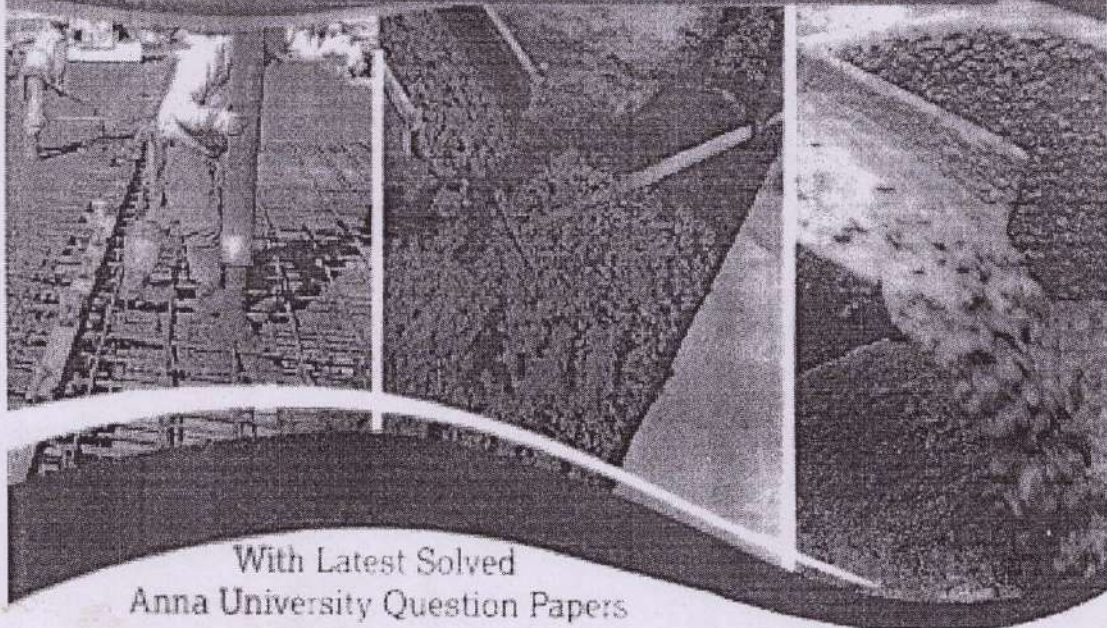
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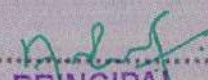
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CONTENTS

UNIT - 1

CONSTITUENT MATERIALS	1.1 – 1.67
1.1. Introduction	1.1
1.2. Cement.....	1.1
1.2.1. Definition.....	1.1
1.2.2. Composition of Cement.....	1.2
1.2.3. Role of Oxides in Cement.....	1.2
1.3. Manufacture of Cement.....	1.3
1.3.1. General.....	1.3
1.3.2. Wet Process.....	1.4
1.3.3. Dry Process	1.6
1.4. Types of Cement	1.8
1.4.1. Ordinary Portland Cement.....	1.9
1.4.2. Rapid Hardening Portland Cement	1.9
1.4.3. Extra Rapid Hardening Portland Cement	1.10
1.4.4. Portland Blast-Furnace Cement	1.10
1.4.5. Low Heat Portland Cement.....	1.11
1.4.6. Sulphate Resisting Cement	1.12
1.4.7. White Portland Cement.....	1.12
1.4.8. Coloured Portland Cements	1.13
1.4.9. Natural Cements	1.13
1.4.10. Super Sulphate Cement.....	1.13


PRINCIPAL
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1.9.4. Test for Determining the Soundness of Cement.....	1.31
1.9.5. Test for determining the strength of cement	1.33
1.9.6. Fineness Test.....	1.35
1.9.7. Specific Gravity Test	1.36
1.9.8. Chemical Test	1.37
1.10. Aggregates	1.37
1.10.1. Introduction.....	1.37
1.10.2. General Classification of Aggregate.....	1.38
1.10.3. Mechanical Properties.....	1.39
1.11. Tests on Aggregates	1.43
1.11.1. Test for determination of flakiness index and elongation index.....	1.43
1.11.2. Test for determination of aggregate crushing value	1.45
1.11.3. Test for the determination of aggregate impact value	1.48
1.11.4. Test for determination of aggregate abrasion value.....	1.50
1.11.5. Test for Determination of Aggregate Abrasion by Deval Test.....	1.52
1.11.6. Test for Determination of aggregate Abrasion by Dorry Test.....	1.54
1.11.7. Test for Determination of Specific Gravity	1.56
1.11.8. Test for the Determination of Bulk Density and Voids in Aggregate.....	1.57
1.11.9. Test for the Determination of the Percentage of Bulking of Fine Aggregate (Field Method)	1.58
1.11.10. Test for the Estimation of Organic Impurities	1.59
1.11.11. Test to Determine Soundness of Aggregate.....	1.59
1.12. Water	1.60

C.4

1.12.1. General	1.60
1.12.2. Qualities of Water	1.60
Two Marks Questions and Answers.....	1.62
Review Questions.....	1.66

UNIT - 2

CHEMICAL AND MINERAL ADMIXTURES	2.1 – 2.19
2.1. Introduction	2.1
2.2. Classification of Admixtures	2.1
2.2.1. Chemical Admixtures	2.2
2.2.2. Mineral Admixtures	2.2
CHEMICAL ADMIXTURES	2.2
2.3. Plasticizers (Water Reducer).....	2.2
2.3.1. General.....	2.2
2.3.2. Conventional Method for High Workability	2.3
2.3.3. Effects of Use of Extra Water in Concrete	2.3
2.3.4. Effects of Use of Plasticizer in Concrete	2.3
2.4. Super Plasticizers.....	2.4
2.4.1. General.....	2.4
2.4.2. Effects of Use of Superplasticizer in Fresh Concrete	2.5
2.4.3. Effects of Use of Superplasticizer in Hardened Concrete	2.5
2.5. Accelerators.....	2.6
2.5.1. General.....	2.6
2.5.2. Accelerating Materials	2.6


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2.6. Retarders	2.7
2.6.1. General	2.7
2.6.2. Retarding Materials	2.8
2.7. Water Proofers	2.8
2.7.1. General	2.8
MINERAL ADMIXTURES	2.9
2.8. Silica fume	2.9
2.8.1. General	2.9
2.8.2. for ms of Silica Fume	2.10
2.8.3. Characteristics of Silica Fume	2.10
2.8.4. Effects of Use of Silica Fume in Fresh Concrete	2.10
2.8.5. Effects of Use of Silica Fume in Hardened Concrete	2.10
2.9. Ground Granulated Blast Furnace Slag (GGBS)	2.11
2.9.1. General	2.11
2.9.2. Effects of Use of GGBS in Fresh Concrete	2.12
2.9.3. Effects of Use of GGBS in Hardened Concrete	2.12
2.10. Metakaolin	2.12
2.10.1. General	2.12
2.11. Fly Ash	2.13
2.11.1. General	2.13
2.11.2. Classification of Fly Ash	2.14
2.11.3. Characteristics of Fly Ash	2.15
2.11.4. Uses of Fly Ash	2.15
2.11.5. Effects of use of Fly Ash in Fresh and Hardened concrete	2.15

C.6

Two Marks Questions and Answers.....2.16

Review Questions.....2.19

UNIT - 3**PROPORTIONING OF CONCRETE MIX**3.1 - 3.74

3.1. Introduction3.1

3.2. Principles of Mix Proportioning.....3.2

3.2.1. Basic Considerations.....3.2

3.3. Properties of Concrete Related To Mix Design3.3

3.3.1. Workability3.3

3.3.2. Compressive Strength.....3.4

3.3.3. Durability of Concrete3.5

3.4. Physical Properties of Materials Required for Mix Design.....3.6

3.4.1. Cement3.6

3.4.2. Aggregates3.7

3.4.3. Water.....3.8

3.5. Requirements for Concrete Mix Design3.9

3.5.1. Characteristic Strength of Concrete Required3.9

3.5.2. Workability Requirement of Concrete.....3.10

3.5.3. Quality Control at Site3.10

3.5.4. Weather Conditions3.11

3.5.5. Exposure Conditions of Concrete3.11

3.5.6. Batching and Mixing Methods3.12

3.5.7. Quality of Materials.....3.12

3.5.8. Special Requirements of Concrete.....3.12

Contents**3.6. Factors**

3.6.1

3.6.2

3.6.3

3.6.4

3.6.5

3.6.6

3.7. Types

3.7.1

3.7.2

3.7.3

3.8. Mix

3.8.1

3.8.2

3.8.3

3.9. Methods

3.9.1

3.9.2

3.9.3

3.9.4

3.9.5

3.10. Mix**Two Marks****Review Questions**

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54

3.6. Factors Affecting the Choice of Mix Proportions.....	3.12
3.6.1. Compressive Strength.....	3.13
3.6.2. Workability	3.13
3.6.3. Durability	3.13
3.6.4. Maximum Nominal Size of Aggregate.....	3.14
3.6.5. Grading and Type of Aggregate	3.14
3.6.6. Quality Control	3.14
3.7. Types of Mixes	3.14
3.7.1. Nominal Mixes	3.15
3.7.2. Design Mixes	3.15
3.7.3. Standard Mixes	3.16
3.8. Mix Proportion Designations.....	3.16
3.8.1. General.....	3.16
3.8.2. Outline of Mix Design Procedure.....	3.16
3.8.3. Advantages of Concrete Mix Design.....	3.17
3.9. Methods of Concrete Mix Design.....	3.18
3.9.1. General.....	3.18
3.9.2. ACI Mix Design Method.....	3.19
3.9.3. USBR Mix Design Practice	3.19
3.9.4. British Mix Design Method (DOE Method).....	3.20
3.9.5. Mix Design Method according to IS Recommended Guidelines (BIS Method of Mix Design).....	3.21
3.10. Mix Design Problems	3.28
Two Marks Questions and Answers.....	3.69
Review Questions.....	3.73

UNIT - 4**FRESH AND HARDENED PROPERTIES OF CONCRETE.....4.1 - 4.16****4.1. Introduction4.1****4.2. Fresh Concrete.....4.2**

4.2.1. Workability4.2

4.2.2. Importance and Significance of Workability4.2

4.2.3. Factors Affecting Workability4.2

4.3. Test for Workability of Concrete.....4.3

4.3.1. General4.3

4.3.2. Slump Test4.3

4.3.3. Compacting Factor Test4.3

4.3.4. Flow Table Test4.3

4.3.5. Vee Bee Consistometer Test4.3

4.4. Segregation.....4.4

4.4.1. General4.4

4.4.2. Conditions for Segregation4.4

4.4.3. Remedies for Segregation4.4

4.5. Bleeding.....4.5

4.5.1. General4.5

4.5.2. Test for Bleeding of Concrete4.5

4.6. Hardened Concrete4.6

4.6.1. General4.6

4.6.2. Compression Test4.6

4.6.3. Flexure Test4.6

4.6.4. Tensile

4.7. Stress Strain

4.7.1. General

4.8. Modulus of Elasticity

4.9. Determination of

4.9.1. General

4.9.2. Procedure

4.9.3. Calculation

4.10. DURABILITY

4.10.1. General

4.10.2. Surface

4.11. PERMEABILITY

4.11.1. General

4.11.2. Procedure

4.11.3. Calculation

4.12. Water Absorption

4.12.1. General

4.12.2. Procedure

4.13. CORROSION

4.13.1. General

4.13.2. Procedure

4.13.3. Calculation

4.13.4. Prevention

4.13.5. Remedies

PRINCIPAL

4.6.4. Tensile Splitting Test	4.21
4.7. Stress Strain Curve of Concrete.....	4.23
4.7.1. General	4.23
4.8. Modulus of Elasticity of Concrete.....	4.25
4.9. Determination of Modulus of Elasticity	4.27
4.9.1. General	4.27
4.9.2. Procedure	4.28
4.9.3. Calculation	4.29
4.10. DURABILITY OF CONCRETE	4.29
4.10.1. General	4.29
4.10.2. Significance of Durability	4.29
4.11. PERMEABILITY	4.32
4.11.1. General	4.32
4.11.2. Coefficient of Permeability	4.32
4.11.3. Permeability of Cement Paste	4.33
4.12. Water Absorption.....	4.37
4.12.1. General	4.37
4.12.2. Absorption Test for Concrete.....	4.38
4.13. CORROSION RESISTANCE OF CONCRETE.....	4.38
4.13.1. General	4.38
4.13.2. Mechanism of Corrosion of Steel	4.38
4.13.3. Effect of Corrosion.....	4.40
4.13.4. Exposure Conditions Affecting Durability of Concrete	4.41
4.13.5. Methods of Corrosion Potential Assessment of Concrete Structures	4.43

C.10

Two Marks Questions and Answers.....

Review Questions.....

Contents

UNIT - 5**SPECIAL CONCRETE**.....

5.1 - 5.9

5.1. Introduction.....**5.2. Types of Special Concrete**.....**5.3. Light Weight Concrete (Lwc)**.....

5.3.1. General.....

5.3.2. Classification of Lightweight Concrete.....

5.3.3. Advantages of Using Light-Weight Concrete.....

5.3.4. Properties of Light Weight Concrete.....

5.3.5. Applications.....

5.4. Foam Concrete.....

5.4.1. General.....

5.4.2. Definition.....

5.4.3. Types of Foamed Concrete.....

5.4.4. Production of Foamed Concrete.....

5.4.5. Properties of Foamed Concrete.....

5.4.6. Advantages of Foamed Concrete.....

5.4.7. Disadvantages of Foamed Concrete.....

5.4.8. Applications of Foamed Concrete.....

5.5. Self-Compacting Concrete.....

5.5.1. General.....

5.6. Va

PRINCIPAL

5.5.2. Definition	5.18
5.5.3. Benefits and Advantages.....	5.18
5.5.4. Development of Self-Compacting Concrete	5.19
5.5.5. Requirements for Constituent Materials	5.19
5.5.6. Mixture Proportions	5.21
5.5.7. Mixing Procedure.....	5.23
5.5.8. Requirements for Self-Compacting Concrete	5.24
5.5.9. Test Methods.....	5.25
5.5.10. Production	5.27
5.5.11. Delivery and Transportation	5.28
5.5.12. Placing.....	5.28
5.5.13. Curing.....	5.29
5.5.14. Quality Control	5.29
5.5.15. Properties of Hardened Self-Compacting Concrete	5.30
5.5.16. Structural Performance of SCC.....	5.32
5.5.17. Application Area of SCC	5.32
5.6. Vacuum Concrete.....	5.33
5.6.1. General	5.33
5.6.2. Definition	5.33
5.6.3. Technique And Equipments.....	5.33
5.6.4. Effect of Vacuum Dewatering of Concrete.....	5.34
5.6.5. Advantages of Vacuum Concreting	5.35
5.6.6. Disadvantages of Vacuum Concreting.....	5.36
5.6.7. Applications of Vacuum Concrete	5.36

5.7. High Strength Concrete (Hsc).....	5.37	5.10. F
5.7.1. General	5.37	5
5.7.2. Methods For Making Hight Strength Concrete (HSC)	5.38	5
5.7.3. Materials Used For HSC	5.39	5
5.7.4. Properties of HSC	5.39	5
5.7.5. Advantages of HSC	5.40	5
5.7.6. Disadvantages of HSC	5.40	5
5.7.7. Applications of HSC	5.40	5.11. S
5.8. Fibre Reinforced Concrete (FRC)	5.40	5
5.8.1. General	5.40	5
5.8.2. Description	5.41	5
5.8.3. Behavior of FRC	5.41	5
5.8.4. Advantages	5.42	5.12. I
5.8.5. Disadvantages	5.42	5
5.8.6. Applications	5.42	5
5.8.7. Types of FRC	5.43	5
5.8.8. Current Development in FRC	5.44	5
5.9. Ferrocement.....	5.44	5.13. S
5.9.1. General	5.45	5
5.9.2. Material Requirements For Ferrocement	5.47	5
5.9.3. Casting Techniques	5.48	5
5.9.4. Advantages	5.50	5
5.9.5. Disadvantages	5.50	5.14. S
5.9.6. Applications	5.51	

5.10. Polymer Concrete Composites	5.53
5.10.1. General	5.53
5.10.2. Types of Polymer Concrete Composites.....	5.53
5.10.3. Polymer Impergnated Concrete (PIC).....	5.54
5.10.4. Polymer Cement Concrete (PCC).....	5.55
5.10.5. Polymer Concrete (PC)	5.57
5.10.6. Partially Impergnated And Surface Coated (SC) Concrete	5.58
5.11. Sulphur Infiltrated Concrete (SIC)	5.59
5.11.1. General	5.59
5.11.2. Mechanical Properties.....	5.60
5.11.3. Durability Properties	5.60
5.11.4. Applications	5.60
5.12. High Performance Concrete.....	5.61
5.12.1. General	5.61
5.12.2. Field Experience	5.62
5.12.3. Properties	5.63
5.12.4. Classification of HPC.....	5.63
5.12.5. Applications	5.63
5.13. Slurry Infiltrated-Fibered Concrete (SIFCON)	5.64
5.13.1. General	5.64
5.13.2. Factors Affecting Efficiency of Sifcon	5.64
5.13.3. Advantages.....	5.64
5.13.4. Applications	5.64
5.14. Shotcrete/Gunite.....	5.65

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Home and Office Automation System Using Human Activity Recognition

Mary Gladence.L, Hari Haran Sivakumar, Gobinath Venkatesan and Shanmuga Priya.S

Abstract—The recent years have witnessed significant progress in the automation of human activity recognition in order to realize intelligent environments which are capable of detecting users actions and gestures so that the needed services can be provided automatically and instantly for maximizing the user comfort and safety as well as minimizing energy. If a person enters into the room and sits/stands/lies down then the fan or AC should be automatically turned on. If a person comes and walks away or keeps roaming around, then they should not be turned on thus saving energy.

Index Terms—energy efficiency; fuzzy logic system; Human Silhouette.

I. INTRODUCTION

We aim to contribute towards creating ambient intelligent environments which can intelligently understand the users by activity recognition so that the needed services can be provided automatically and instantly to maximize the user comfort and safety while minimizing the utilized energy. In order to realize such intelligent environments, there is a need first to automatically recognize the user behavior so that the best environment action can be taken in order to satisfy the environment objectives.

Automation lowers the human judgment to the lowest degree possible but does not completely eliminate it. The recent developments in technology which permit the use of Arduino have enabled different devices to have capabilities of connecting with each other. Using a WIFI shield to act as a Micro web server for the Arduino eliminates the need for wired connections between the Arduino board and computer which reduces cost and enables it to work as a standalone device.

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The Wi-Fi shield needs connection to the internet from a wireless router or wireless hotspot and this would act as the gateway for the Arduino to communicate with the Internet. With this in mind, an internet based home automation system for remote control of home appliances is designed. Our context involves 5 activities namely sitting, standing, walking, lying & No person down. So it involves 3-d feature set extraction only which includes dimensions of the Human Silhouette (width and height) and motion characteristics. Sensors are used to track the number of people entering and leaving the room and turn on/off light and fan. The approaches of activity recognition utilize complicated feature models which increase the level of complexity in constructing the fuzzy logic system.

A. NEED FOR HOME AUTOMATION

Our Home automation system is entirely based on the human activities. Because the motion detected by the motion sensor alone cannot be a sufficient input. There are certain activities for which the appliances need not be turned on. So we use the real time video input to detect Human activities based on which the automation is done.

B. CHALLENGES IN HOME AUTOMATION

Existing human activity recognition methods rely on assumptions or computationally expensive approaches. Some of the challenges faced are, obtaining accurate results in case of illumination changes, shadow regions that are projected by foreground objects and are detected as moving objects, movement of various objects in the background and multi person entering a single frame etc.

The related work and proposed work of this paper is described in Section II and III respectively. Section IV describes the system architecture. Section V and VI discuss about the result and concludes the paper respectively.

II. RELATED WORK

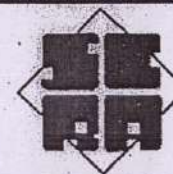
There are a few research papers which serve as the base idea of the work is referred from [1-10].



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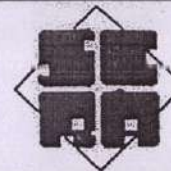

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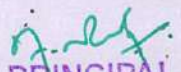
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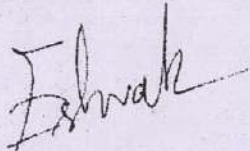
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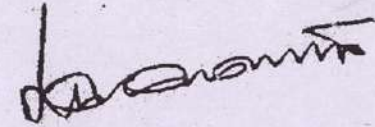
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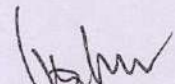
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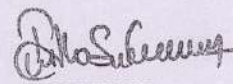
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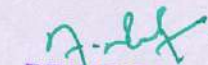
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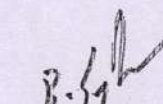
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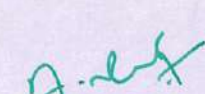
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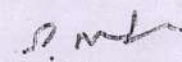
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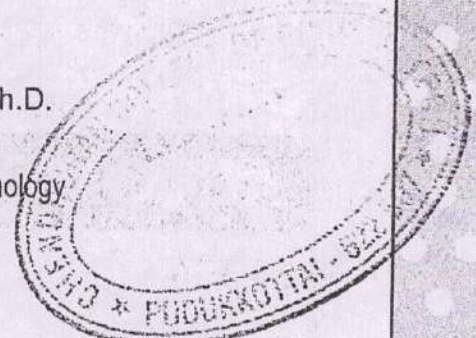
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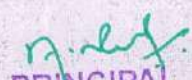
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CONTENTS

VEHICLE STRUCTURE AND ENGINES

UNIT-I

1.1 Introduction	1.1
1.2 Classification of Automobiles	1.2
1.3 Functions of Major Components of an Automobile	1.4
1.3.1 Chassis and Frame	1.4
1.3.2 Engine or Power Plant	1.4
1.3.3 Transmission System (Clutch and Gear Box)	1.4
1.3.4 Clutch	1.5
1.3.5 Final Drive	1.5
1.3.6 Braking System	1.5
1.3.7 Gear Box	1.6
1.3.8 Steering System	1.6
1.3.9 Front Axle	1.6
1.3.10 Suspension System	1.6
1.4 Chassis Frame and Body	1.7
1.4.1 Chassis	1.7
1.4.2 Vehicle Frame	1.9
1.4.3 Vehicle body	1.17
1.5 Vehicle Aero Dynamics	1.23
1.5.1 Vehicle attributes affected by aerodynamics	1.25
1.5.2 Aerodynamic Characteristics	1.27
1.6 IC Engine Construction	1.31
1.6.1 Advantages of Internal Combustion Engines	1.33
1.6.2 Disadvantages of Internal Combustion Engines	1.33
1.6.3 Types of Engines	1.34
1.6.4 Working Principle of I.C. Engine	1.36

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1.6.5 Comparison Between Two Stroke and Four Stroke Engines	1.40
1.6.6 Comparison of Diesel Engine with Petrol Engine	1.41
1.7 Components of Engine	1.42
1.7.1 Materials Used for Engine Parts	1.70
1.8 Cooling System	1.71
1.8.1 Types of Cooling System	1.72
1.8.2 Water Cooling System	1.73
1.9 Lubrications System	1.80
1.9.1 Crankcase Ventilation	1.80
1.9.2 Types of Lubrication	1.81
1.9.3 Oil Pump	1.86
1.9.4 Properties of Lubricant	1.87
1.10 Variable Valve Timing (VVT)	1.89
1.10.1 VVT's Benefit to Fuel Consumption and Emission	1.93
Two Mark Questions With Answers	1.94
Review Questions	1.99

ENGINE AUXILIARY SYSTEMS

UNIT-II

2.1 Introduction	2.1
2.2 Carburettor	2.2
2.2.1 Simple Carburettor	2.3
2.2.2 Venturi-type Carburettor	2.5
2.2.3 Types of Carburettor	2.6
2.2.4 Solex Carburettor	2.9
2.2.5 S.U. Carburettor	2.13
2.2.6 Zenith Carburettor	2.15
2.2.7 Carter Carburettor	2.17
2.3 Mechanical fuel pump - (Lift Pump) – Diaphragm type	2.20

2.4 Gasoline Injection	2.20
2.4.1 Reasons for Gasoline Injection	2.21
2.4.2 Petrol Injection	2.21
2.4.3 Types of Petrol Injection Systems	2.22
2.4.4 Throttle Body Injection (or) Single Point Injection	2.24
2.4.5 Port Injection (or) Multi Point Fuel Injection (MPFI)	2.24
2.5 Mechanical Injection	2.28
2.6 Electronically Controlled Gasoline Injection System (SI Engine)	2.29
2.6.1 Electronic Engine Management System	2.31
2.6.2 Sensors	2.32
2.6.3 Typical Sensors	2.32
2.7 Fuel Supply System of Diesel Engine	2.36
2.7.1 Components of Diesel Engine	2.36
2.7.2 Diesel Injection System	2.37
2.7.3 Types of Diesel Injection System	2.38
2.7.4 Electronically Controlled Diesel Injection System	2.40
2.8 Unit Injectors	2.42
2.8.1 Electronic Unit Injectors (EUI)	2.43
2.8.2 Rotary Distributor Type Fuel Injection Pump	2.47
2.8.3 Common Rail Direct Injection System (CRDI)	2.49
2.8.4 Classification of Diesel Fuel Injection Pumps	2.50
2.8.5 In Line Type Fuel Injection Pump	2.51
2.8.6 Fuel Injector	2.55
2.9 Ignition System	2.57
2.9.1 Battery or Coil Ignition System	2.58
2.9.2 Magneto Coil Ignition System	2.60
2.9.3 Functions of Components	2.61
2.9.4 Comparison Between Battery and Magneto Ignition System	2.69
2.9.5 Disadvantages of Conventional Ignition systems	2.69
2.9.6 Electronic Ignition System	2.69
2.9.7 Capacitive Discharge Ignition System	2.72
2.9.8 Transistorized Coil Ignition System	2.75
2.9.9 Piezo-electric Ignition System	2.76
2.9.10 Texaco Ignition System	2.76

2.10 Starting System	2.77
2.10.1 Starter motor	2.77
2.10.2 Starting Motor Drives	2.78
2.10.3 Battery	2.85
2.11 GENERATORS	2.100
2.11.1 Direct-Current (DC) Generator	2.100
2.11.2 Cut-Out Relay	2.101
2.11.3 Voltage and Current Regulators	2.102
2.12 AC Generator (Alternator)	2.103
2.13 Supercharger	2.105
2.13.1 Supercharging Configurations	2.108
2.13.2 Types of Compressors	2.108
2.14 Turbocharger	2.109
2.15 Waste Gated Turbocharger (WGT)	2.110
2.16 Variable Geometry Turbochargers (VGT)	2.113
2.17 Emission Regulation and Control Systems	2.115
2.17.1 Types of Vehicle Emissions	2.115
2.17.2 Catalytic Converter	2.116
2.17.3 Three-Way Catalytic Converters	2.116
2.18 Euro and Bharat Stage Norms (EURO and BS)	2.119
2.18.1 Implementation Phases of Bharat Norms Vs Euro Norms	2.121
Two Mark Questions With Answers	2.122
Review Questions	2.127

TRANSMISSION SYSTEMS

UNIT-III

3.1 Introduction	3.1
3.1.1 Function of Power Transmission System	3.2
3.2 Clutch	3.2
3.2.1 Principle of Clutch	3.3
3.2.2 Main Parts of a Clutch	3.4

3.2.3 Requirements of Clutch	3.4
3.2.4 Types of Clutch	3.5
3.2.5 Single Plate Clutch	3.5
3.2.6 Clutch Components	3.7
3.2.7 Multi-plate Clutch	3.10
3.2.8 Working of Multi Plate Clutch	3.12
3.2.9 Cone Clutch	3.12
3.2.10 Diaphragm Clutch	3.14
3.2.11 Centrifugal Clutch	3.15
3.2.12 Semicentrifugal Clutch	3.16
3.2.13 Hydraulic Clutch	3.17
3.2.14 Positive Clutch or Dog and Spline Clutch	3.18
3.2.15 Vacuum Clutch	3.19
3.2.16 Electromagnetic Clutch	3.20
3.2.17 Clutch Trouble Shooting	3.21
3.3 Gear Box	3.22
3.3.1 Functions of Transmission	3.23
3.3.2 Types of Gears	3.24
3.3.3 Types of Transmission (Gear box)	3.27
3.3.4 Sliding Mesh Gear Box	3.28
3.3.5 Constant Mesh Gear Box	3.31
3.3.6 Synchromesh Gear Box	3.33
3.3.7 Automatic Gear box	3.37
3.4 Hydramatic Transmission	3.37
3.5 Epicyclic Gear Box	3.40
3.5.1 Gear Shift Mechanism	3.43
3.6 Over Drive	3.45
3.6.1 Construction and Working of Over Drive	3.45
3.6.2 Advantages	3.46

3.7 Transfer Box	3.47
3.7.1 Transfer Case Types	3.47
3.7.2 Transfer Case Construction	3.48
3.7.3 Transfer Case Modes of Operation	3.49
3.7.4 Types of Transfer Cases	3.50
3.7.5 Planetary Gear Operation	3.52
3.8 Freewheel Unit or Over Running Clutches	3.53
3.9 Fluid Flywheel	3.55
3.9.1 Working	3.56
3.9.2 Advantages	3.57
3.9.3 Disadvantages	3.57
3.10 Torque Converter	3.57
3.10.1 Working	3.59
3.10.2 Advantages of Automatic Transmission	3.60
3.11 Propeller Shaft	3.60
3.11.1 Requirements of a Propeller Shaft	3.63
3.12 Universal Joints	3.64
3.12.1 Types of Universal Joints	3.66
3.13 Final Drive	3.71
3.14 Differential Unit	3.71
3.14.1 Differential Assembly	3.72
3.14.2 Construction and Working of Differential:	3.72
3.14.3 Differential Lock	3.74
3.14.4 Self Locking Differential	3.74
3.15 Rear Axle	3.75
3.15.1 Types of Rear Axle	3.75
3.15.2 Rear Axle Drives	3.78
3.15.3 Types Rear Axle Drives	3.78
Two Mark Questions With Answers	3.80
Review Questions	3.85

STEERING, BRAKES AND SUSPENSION SYSTEMS UNIT-IV

4.1 Introduction	4.1
4.2 Steering System	4.1
4.2.1 Functions of Steering System	4.3
4.2.2 Components of Steering System	4.3
4.2.3 Types of Steering Linkages	4.5
4.2.4 Wheel Alignment	4.6
4.2.5 Factors Affect the Wheel Alignment	4.6
4.3 Steering Geometry	4.6
4.3.1 Steering Mechanism	4.12
4.3.2 Ackermann Steering Gear	4.12
4.3.3 Ackermann Principle with Working	4.13
4.3.4 Reversible and Irreversible Steering	4.15
4.3.5 Under-steering and Over-steering	4.15
4.4 Steering Gear Box	4.16
4.4.1 Power Steering	4.23
4.4.2 Integral Power Steering	4.25
4.4.3 Linkage-booster power steering	4.26
4.4.4 Electronic Power Steering System	4.27
4.5 Wheels and Tyres	4.29
4.5.1 Wheels	4.29
4.5.2 Tyre	4.31
4.5.3 Types of Tyres	4.32
4.5.4 Advantages to Cross Ply Tyres	4.33
4.5.5 Advantages of the Radial Ply Tyres	4.33
4.5.6 Advantages of Tubeless Tyre	4.35
4.5.7 Tyre Designations	4.35

4.6 Front Axle	4.36
4.6.1 Types of Front Axle	4.37
4.7 Suspension System	4.40
4.7.1 Principle of the Suspension System	4.40
4.7.2 Functions of Suspension System	4.41
4.7.3 Components of the Suspension System	4.41
4.7.4 Common Problems of the Suspension System	4.42
4.8 Types of suspension springs	4.42
4.8.1 Independent Suspension	4.51
4.8.2 Non-independent Suspension	4.52
4.8.3 Independent suspension (Front wheel-Dead axle suspension)	4.53
4.8.4 Independent Suspension (Rear wheel-Live axle)	4.57
4.8.5 Stabilizer or Anti – Roll Bar	4.58
4.8.6 Air Suspension System	4.58
4.9 Shock Absorbers	4.60
4.9.1 Hydraulic Shock Absorber	4.60
4.9.2 Gas Filled Shock Absorber	4.62
4.9.3 Advantages	4.63
4.10 Braking System	4.63
4.10.1 Functions of Vehicle Braking	4.63
4.10.2 Requirements of Automobile Brakes	4.64
4.10.3 Classification of Brakes	4.64
4.10.4 Types of Mechanical Brakes	4.65
4.10.5 Advantages	4.66
4.10.6 Disadvantages	4.66
4.10.7 Disc Brake Assembly	4.66
4.10.8 Disc Brake Types	4.68
4.10.9 Advantage of Disc Brakes	4.69
4.10.10 Disadvantage of Disc Brakes	4.69

4.11 Hydraulic Brakes	4.69
4.11.1 Construction and Working of Hydraulic systems	4.70
4.11.2 Advantages of Hydraulic Brakes	4.73
4.11.3 Disadvantages Hydraulic Brakes	4.74
4.11.4 Bleeding of Brakes	4.74
4.12 Air Brake System	4.75
4.13 Power brakes	4.77
4.13.1 Vacuum Servo Brakes	4.77
4.13.2 Parking Brake or Emergency Brake	4.78
4.14 Anti-lock Braking System (ABS)	4.79
4.14.1 Components of ABS	4.80
4.15 Electronic Brake Force Distribution (EBD)	4.84
4.15.1 Benefits of EBD	4.86
4.16 Traction Control	4.87
Two Mark Questions With Answers	4.90
Review Questions	4.95

ALTERNATIVE ENERGY SOURCES

UNIT-V

5.1 Introduction	5.1
5.1.1 Alternative fuels	5.3
5.1.2 Future Fuels	5.7
5.2 Natural Gas	5.7
5.2.1 Applications of Natural Gas	5.8
5.2.2 Natural Gas Production Process	5.8
5.2.3 Advantages of Natural Gas	5.10
5.2.4 Compressed Natural Gas [CNG]	5.10
5.2.5 Liquefied Natural gas (LNG)	5.11
5.2.6 Liquefied Natural gas (LNG) Process	5.11

5.3 Liquefied Petroleum Gas (LPG)	5.12
5.3.1 LPG Production	5.13
5.3.2 LPG Conversion Systems	5.15
5.3.3 LPG Applications	5.18
5.3.4 Comparison Between CNG and LPG	5.19
5.4 Biofuels	5.19
5.5 Biodiesel	5.20
5.5.1 Raw Materials for Biodiesel Production	5.20
5.5.2 Biodiesel Production process	5.20
5.5.3 Biodiesel Properties	5.21
5.5.4 Advantages of the Biodiesel	5.25
5.5.5 Disadvantages of the Biodiesel	5.26
5.6 Bioethanol	5.26
5.6.1 Bioethanol Production	5.27
5.7 Gasohol	5.30
5.7.1 Common Blends of Gasohol	5.31
5.7.2 Gasohol Advantages	5.31
5.8 Hydrogen	5.31
5.8.1 Role of Hydrogen	5.32
5.8.2 Hydrogen Production Methods	5.33
5.8.3 Production of Hydrogen From Coal	5.33
5.8.4 Properties of Hydrogen	5.37
5.9 SI and CI Engine Modification based on alternative fuels Characteristics	5.39
5.9.1 Combustion Characteristics of SI Engine	5.39
5.9.2 Combustion Characteristics of CI Engine	5.40
5.10 Electric Vehicles	5.45
5.10.1 Principle of Electric Vehicles	5.46
5.10.2 Construction and Working of Electric Vehicles	5.47
5.10.3 Advantages of EVs	5.50

5.10.4 Disadvantages of EVs	5.51
5.10.5 Applications of Electric Vehicles	5.51
5.10.6 Benefits of Electric Vehicles	5.52
5.11 Hybrid Electrical Vehicles	5.52
5.11.1 Introduction.....	5.52
5.11.2 Types of Hybrid drive systems	5.53
5.11.3 Advantages of Series Hybrid Vehicles	5.55
5.11.4 Disadvantages of Series Hybrid Vehicles	5.56
5.11.5 Advantages of Parallel Hybrid Vehicles	5.59
5.11.6 Disadvantages of Parallel Hybrid Vehicles	5.59
5.11.7 Examples of PHEV	5.59
5.11.8 Advantages of Combined Hybrid Vehicles	5.60
5.11.9 Disadvantages of Combined Hybrid Vehicles	5.61
5.11.10 Example of CHEV.....	5.61
5.12 Fuel Cell	5.61
5.12.1 Introduction.....	5.61
5.12.2 Working Principle of Fuel Cells	5.62
5.12.3 Types of Fuel Cells	5.63
5.12.4 Advantages of Fuel Cell:	5.69
5.12.5 Disadvantages of Fuel Cell	5.69
Two Mark Questions With Answers.....	5.70
Review Questions	5.75
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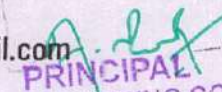
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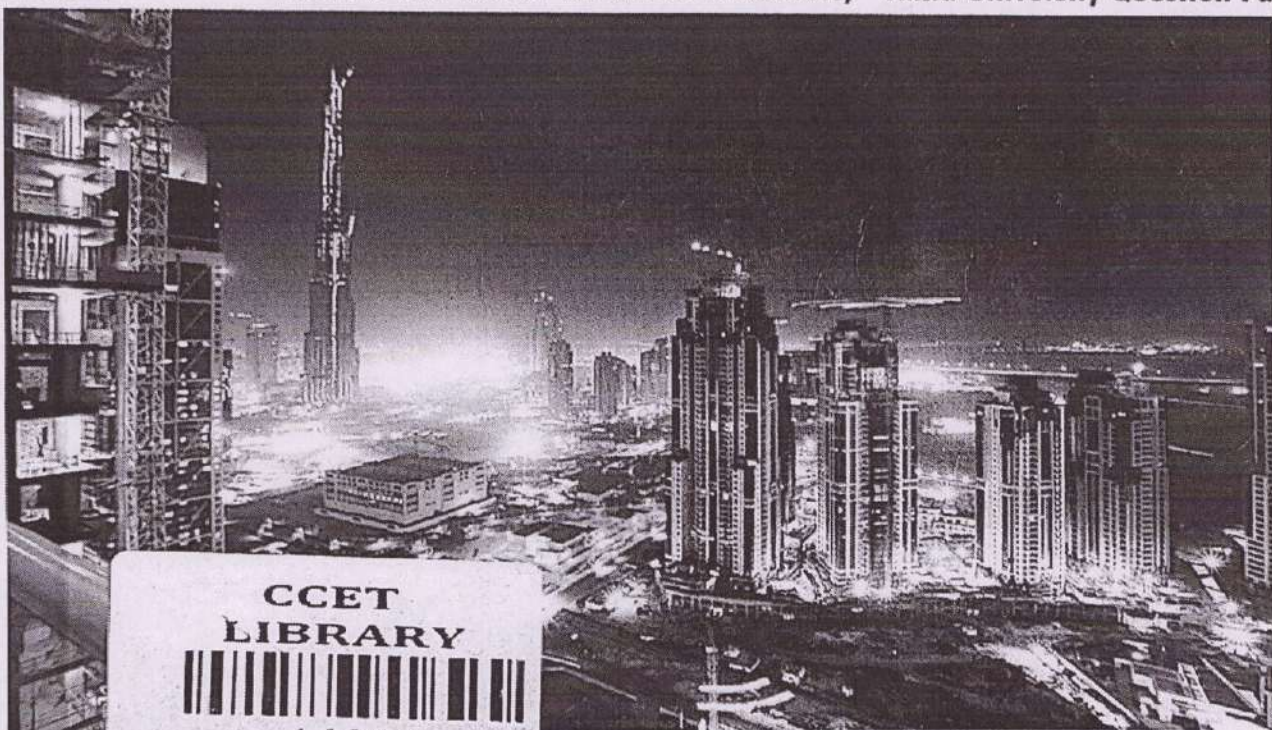

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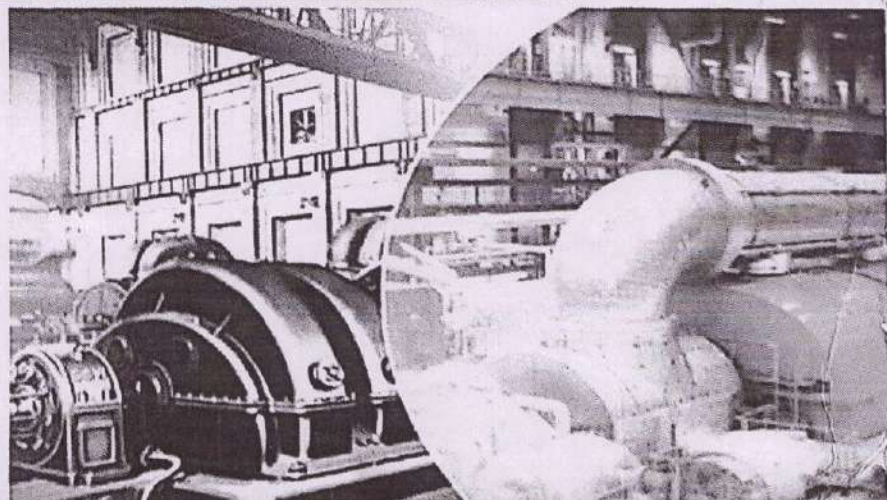


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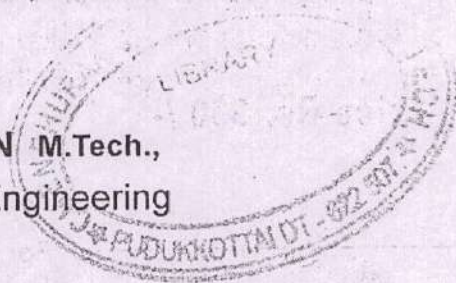
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SYLLABUS

BASIC CIVIL AND MECHANICAL ENGINEERING

A - CIVIL ENGINEERING

UNIT-I SURVEYING AND CIVIL ENGINEERING MATERIALS

Surveying: Objects-types-classification-principles-measurements of distances-angles-levelling-determination of areas-illustrative examples.

Civil Engineering Materials: Bricks-stones-sand-cement-concrete-steel sections.

UNIT-II BUILDING COMPONENTS AND STRUCTURES

Foundations: Types, Bearing capacity - Requirement of good foundations.

Superstructure: Bricks masonry - stone masonry - beams - columns - lintels - roofing - flooring - plastering - Mechanics - Internal and external forces - stress-strain - elasticity - Types of Bridges and Dams - Basics of Interior Design and Landscaping.

B - MECHANICAL ENGINEERING

UNIT-III POWER PLANT ENGINEERING

Introduction, Classification of Power Plants - Working Principle of Steam, Gas, Diesel, Hydro - electric and Nuclear Power Plants - Merits and Demerits - Pumps and Turbines - Working Principle of Reciprocating Pumps (single acting and double acting) - Centrifugal Pump.

UNIT-IV IC ENGINES

Internal combustion engine as automobile power plant-Working principle of Petrol and Diesel Engines - Four Stroke and Two Stroke Cycles - Comparison of four stroke and two stroke engines - Boiler as a power plant.

UNIT-V REFRIGERATION AND AIR CONDITIONING SYSTEM

Terminology of Refrigeration and Air Conditioning. Principle of vapour compression and absorption system - Layout of typical domestic refrigerator - Window and Split type room Air conditioner.

CONTENTS

UNIT -1 SURVEYING AND CIVIL ENGINEERING MATERIALS

SURVEYING

1.1	Definition - Surveying	1.1
1.2	Plan and Map	1.1
1.3	Objectives of Surveying	1.1
1.4	General steps involved in construction	1.2
1.5	Classification of surveys	1.3
1.6	Principles of Surveying	1.6
1.7	Types of Surveying.....	1.9
1.8	Measurement of distances.....	1.11
	1.8.1 Chain Surveying.....	1.11
	1.8.2 Errors in Chaining.....	1.16
	1.8.3. Technical terms in chain surveying.....	1.16
1.9	Measurement of angles.....	1.18
	1.9.1 Compass Surveying.....	1.19
	1.9.2 Comparison of prismatic and surveyor's compass.....	1.22
1.10	Bearing.....	1.23
1.11	Levelling.....	1.26
	1.11.1 Instruments for levelling.....	1.27
	1.11.2 Principles of levelling.....	1.29
	1.11.3 Classification of levelling.....	1.29
	1.11.4 Reduction of levels.....	1.31
	1.11.5 Comparison of Height of Collimation Method and Rise and Fall Method	1.32
1.12	Illustrative example.....	1.32
1.13	Determination of areas.....	1.34
1.14	Computation of areas by ordinate method.....	1.35
1.15	Illustrative examples.....	1.39

CIVIL ENGINEERING MATERIALS

1.16	Civil Engineering Materials – Introduction.....	1.46
1.17	General properties of Civil Engineering materials.....	1.46
	1.17.1 Physical properties.....	1.46
	1.17.2. Mechanical Properties.....	1.47
1.18	Bricks.....	1.48
	1.18.1 Manufacture of bricks.....	1.49
	1.18.2 Tests for Bricks.....	1.56
1.19	Classification of bricks.....	1.58
	1.19.1 Uses of Bricks.....	1.60
1.20	Stones.....	1.61
	1.20.1 Tests for stones.....	1.63
	1.20.2 Qualities of Good Building Stone.....	1.64
	1.20.3 Quarrying.....	1.65
	1.20.4 There are two types of dressing.....	1.65
	1.20.5 Preservation of stone.....	1.67
1.21	Sand.....	1.67
1.22	Cement.....	1.69
	1.22.1 Manufacture of portland cement.....	1.70
	1.22.2 Types of cement.....	1.74
	1.22.3 Testing of cement.....	1.76
1.23	Concrete.....	1.78
	1.23.1 Preparation (or) Manufacture of Concrete.....	1.79
	1.23.2 Uses of concrete.....	1.80
	1.23.3 Types of concrete.....	1.81
	1.23.4 Testing of fresh and hardened concrete.....	1.84
	1.23.5 Non-destructure testings for concrete.....	1.87
1.24	Steel Sections.....	1.89
1.24.1	Heat treatment of steel.....	1.91
1.24.2	Classification of steel sections.....	1.92
	Review Questions	1.96

UNIT – 2 BUILDING COMPONENTS AND STRUCTURES

FOUNDATIONS

2.1	Definition – Foundation.....	2.1
2.1.1	Purpose of Foundation	2.1
2.1.2	Functions of Foundation	2.1
2.2	Types of foundation	2.1
2.2.1	Shallow foundation	2.2
2.2.2	Deep foundation	2.6
2.2.3	Machine foundation	2.11
2.3	Bearing capacity of soil.....	2.14

SUPER STRUCTURES

2.4	Introduction – Superstructure.....	2.17
2.5	Brick Masonry.....	2.17
2.5.1	Types of Bricks.....	2.17
2.5.2	Terminology used in Brick Masonry.....	2.18
2.5.3	Bonds in brick work.....	2.20
2.5.4	Types of Bond.....	2.20
2.5.5	Comparison of the English and Flemish Bond.....	2.24
2.6	Stone Masonry.....	2.25
2.6.1	Terminology in Stone Masonry.....	2.25
2.6.2	Classification of stone masonry.....	2.26
2.6.3	Types of ashlar masonry.....	2.29
2.6.4	Principles in Stone Masonry Construction.....	2.30
2.6.5	Comparison of Brick and Stone Masonry.....	2.30
2.7	Beams.....	2.31
2.7.1	Classification of beams.....	2.31
2.7.2	Terminology of beams.....	2.33
2.8	Columns.....	2.34
2.9	Lintels.....	2.35

Principal

2.10	Roofing.....	2.38
2.11	Flooring.....	2.45
2.12	Plastering.....	2.50
	2.12.1 Types of Plastering.....	2.50
	2.12.2. Requirements of Good plaster.....	2.51
	2.12.3 Methods of plastering.....	2.51
2.13	Mechanics.....	2.53
	2.13.1 Types of stress.....	2.54
	2.13.2 Illustrative example.....	2.59
2.14	Bridges.....	2.66
	2.14.1 Classification of Bridges.....	2.67
2.15	Dams.....	2.75
	2.15.1 Classification of dams.....	2.76
	2.15.2 Causeways.....	2.83
2.16.	Basics of Interior Design.....	2.85
	2.16.1. Factors affectir g Interior decoration.....	2.86
	2.16.2. Colour and its roll in Interior Decoration.....	2.87
	2.16.3. Aesthetics.....	2.89
2.17	Landscaping.....	2.95
	Review Questions.....	2.99


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UNIT – 3 POWER PLANT ENGINEERING

POWER PLANT

3.1	Power Plant – Introduction.....	3.1
3.2	Classification of power plants.....	1
3.3	Steam Power Plant.....	3.2
3.3.1	Essential components of Steam Power Plant.....	3.3
3.3.2	Circuits or flow paths of Steam Power Plant.....	3.5
3.3.3	Working of Steam (Thermal) Power Plants.....	3.9
3.4	Gas Turbine Power Plant.....	3.10
3.4.1	Components of Gas Turbine Power Plant.....	3.10
3.4.2	Working of Gas Turbine Power Plant.....	3.13
3.5	Diesel Power Plant.....	3.15
3.5.1	Components of Diesel Power Plant.....	3.16
3.6	Hydro - Electric Power Plant.....	3.20
3.6.1	Components of Hydro-Electric Power Plant.....	3.22
3.6.2	Working of hydro-electric power plant.....	3.23
3.7	Nuclear Power Plant.....	3.25
3.7.1	Principle of Nuclear Reactor	3.28
3.7.2	Main Parts of Nuclear Reactor	3.28
3.7.3	Main Components of a Nuclear Power Plant	3.30
3.7.4	Working of a Nuclear Power Plant	3.30
3.7.5	Classification of Nuclear Reactors	3.33
3.7.6	Pressurized Water Reactor (PWR)	3.34
3.7.7	Boiling Water Reactor (BWR):.....	3.35
3.7.8	Gas Cooled Reactor (GCR)	3.36
3.7.9	Fast Breeder Reactor (FBR)	3.38
3.7.10	Comparison of Power Plants	3.39

PUMPS

3.8	Pumps – Introduction.....	3.41
3.8.1	Classification of Pumps.....	3.41
3.8.2	Dynamic Pressure Pumps (Roto dynamic pumps).....	3.41
3.8.3	Positive displacement pumps.....	3.41

3.9	Centrifugal Pumps.....	3.42
3.9.1	Classification of centrifugal pumps.....	3.42
3.9.2	Elements of centrifugal pumps.....	3.42
3.9.3	Working Principle.....	3.45
3.9.4	Head of a centrifugal pump	3.46
3.9.5	Single stage centrifugal pumps.....	3.47
3.9.6	Multistage centrifugal pump.....	3.49
3.9.7	Priming.....	3.51
3.9.8	Self-priming devices.....	3.51
3.10	Reciprocating Pump.....	3.52
3.10.1	Classification of reciprocating pump.....	3.52
3.10.2	Single acting reciprocating pump.....	3.53
3.10.3	Double acting Reciprocating pump.....	3.54
3.10.4	Specification of a Pump.....	3.56
3.10.5	Application of pump.....	3.56
3.10.6	Comparison between Centrifugal and Reciprocating pumps.....	3.57

TURBINES

3.11	Introduction.....	3.58
3.12	Steam Turbine.....	3.58
3.12.1	Working Principle of Steam Turbines.....	3.58
3.12.2	Classification of Steam Turbines.....	3.60
3.12.3	Impulse Turbine (De Laval Turbine).....	3.62
3.12.4	Compounding of Steam Turbine.....	3.63
3.12.5	Reaction Turbine (Parson's Reaction Turbine).....	3.68
3.12.6	Compounding for Reaction Turbine.....	3.70
3.12.7	Comparison of impulse and reaction turbine.....	3.71
3.13	Gas turbine.....	3.72
3.13.1	Classification of gas Turbine.....	3.73
3.13.2	Differences between Closed and Open-Cycle Gas Turbine.....	3.76
3.14	Water Turbines.....	3.78
3.14.1	Classification of water (Hydraulic) turbines.....	3.78
3.14.2	Pelton Wheel Turbine.....	3.80
3.14.3	Francis turbine.....	3.82
3.14.3	Kaplan turbine or Propeller turbine.....	3.85
	Review Questions.....	3.87

UNIT - 4 IC ENGINES

IC ENGINES

4.1	Automobile - Introduction	4.1
4.2	Internal combustion engines as automobile power plant	4.2
4.3	IC engine basic terms	4.2
4.4	Classification of IC engines	4.3
4.5	IC engine construction features	4.5
4.6	Materials used for engine parts	4.8
4.7	Petrol Engines	4.9
4.7.1	Two Stroke Petrol Engine	4.9
4.7.2	Four Stroke Petrol Engines	4.12
4.7.3	Advantages of Two stroke over Four Stroke Cycle Engines	4.17
4.8	Diesel Engines	4.18
4.8.1	Two Stroke Diesel Engine	4.19
4.8.2	Four Stroke Diesel Engine	4.22
4.8.3	Advantages and Disadvantages of SI Engines over CI Engines	4.26
4.9	Comparison of SI and CI engines	4.26
4.10.	Comparison between Two Stroke Vs Four Stroke Engines	4.28

BOILER AS A POWER PLANT

4.11	Introduction of Boiler	4.30
4.12	Classification of Boiler	4.31
4.13	Fire Tube Boiler	4.32
4.14	Water Tube Boiler	4.33
4.15	Differences between Fire Tube and Water Tube Boilers	4.35
4.16	Modern High Pressure Boilers	4.36
4.16.1	Cochran Boiler	4.37
4.16.2	Babcock and Wilcox Boiler	4.40
4.16.3	La Mont Boiler	4.42
4.16.4	Benson Boiler	4.44
	Review Questions	4.47

UNIT - 5 REFRIGERATION AND AIR CONDITIONG SYSTEM

REFRIGERATION

5.1.	Introduction	5.1
5.2.	Principle of Refrigeration	5.2
5.3.	Classification of Refrigeration system	5.2
5.4.	Terminology	5.3
5.5.	Application of Refrigeration	5.6
5.6.	Part of a Refrigerator	5.6
5.7.	Vapour Compression Refrigerator	5.8
5.8.	Vapour Absorption Refrigerator	5.12
5.9.	Comparision between vapour compression and absorption systems	5.16
5.10.	Domestic refrigerator	5.17

AIR CONDITIONING

5.11.	Air Conditioning	5.20
5.12.	Definition and meaning of Air Conditioning	5.20
5.13.	Uses of Air Conditioning	5.21
5.14.	Application of Air Conditioning	5.21
5.15.	Terminology - Air Conditioning	5.23
5.16.	Classification of Air Conditioning System	5.24
5.17.	Window Air Conditioner	5.26
5.18.	Split type Air Conditioner	5.29
5.19.	Central Air Conditioning	5.32
5.20.	Unitary Air Conditioning system Vs Central Air Conditioning System	5.34
	Review Questions	5.35

Two Marks Questions & Answers TMQA 1 - TMQA 42

University Question Papers UQP 1 - UQP 32

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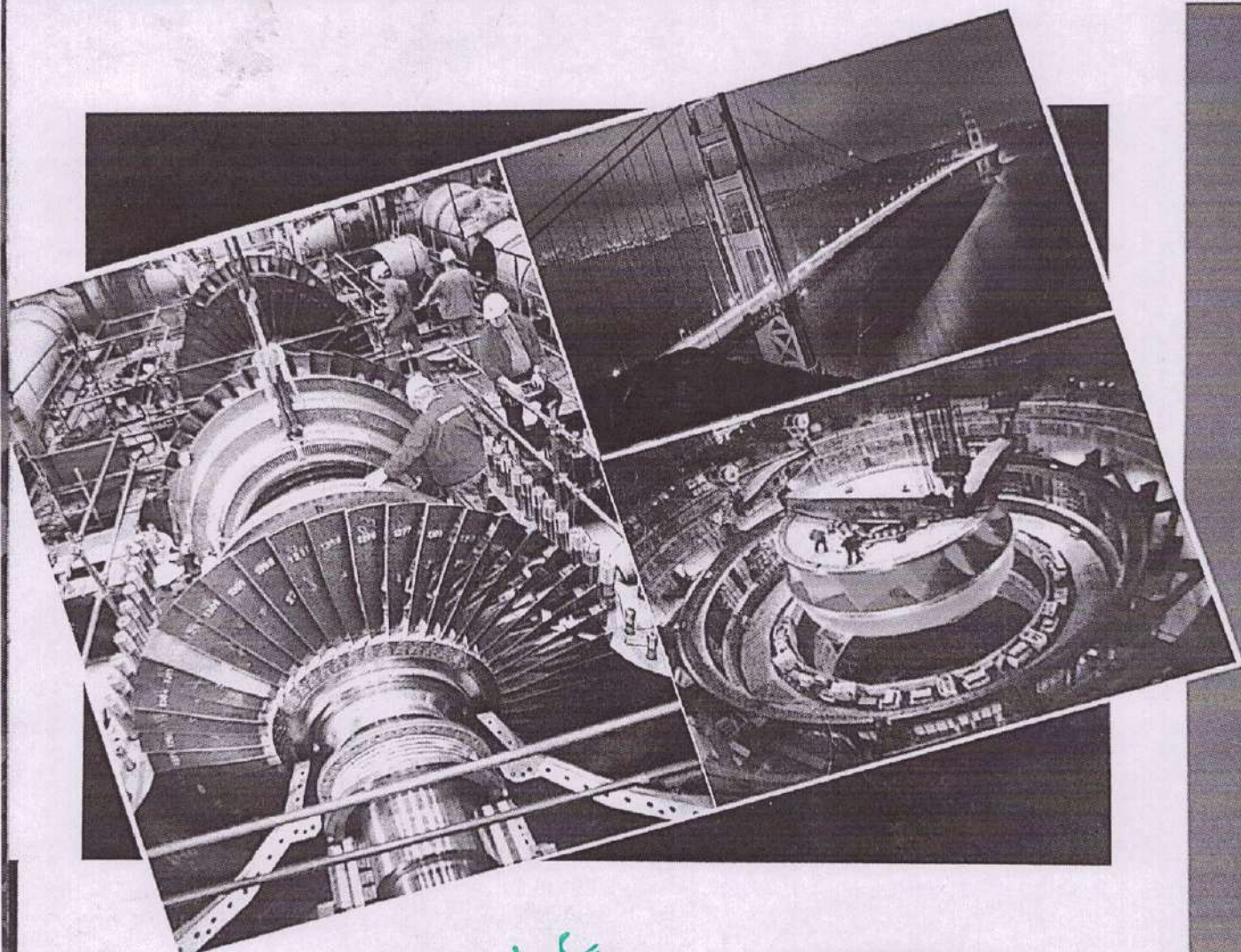
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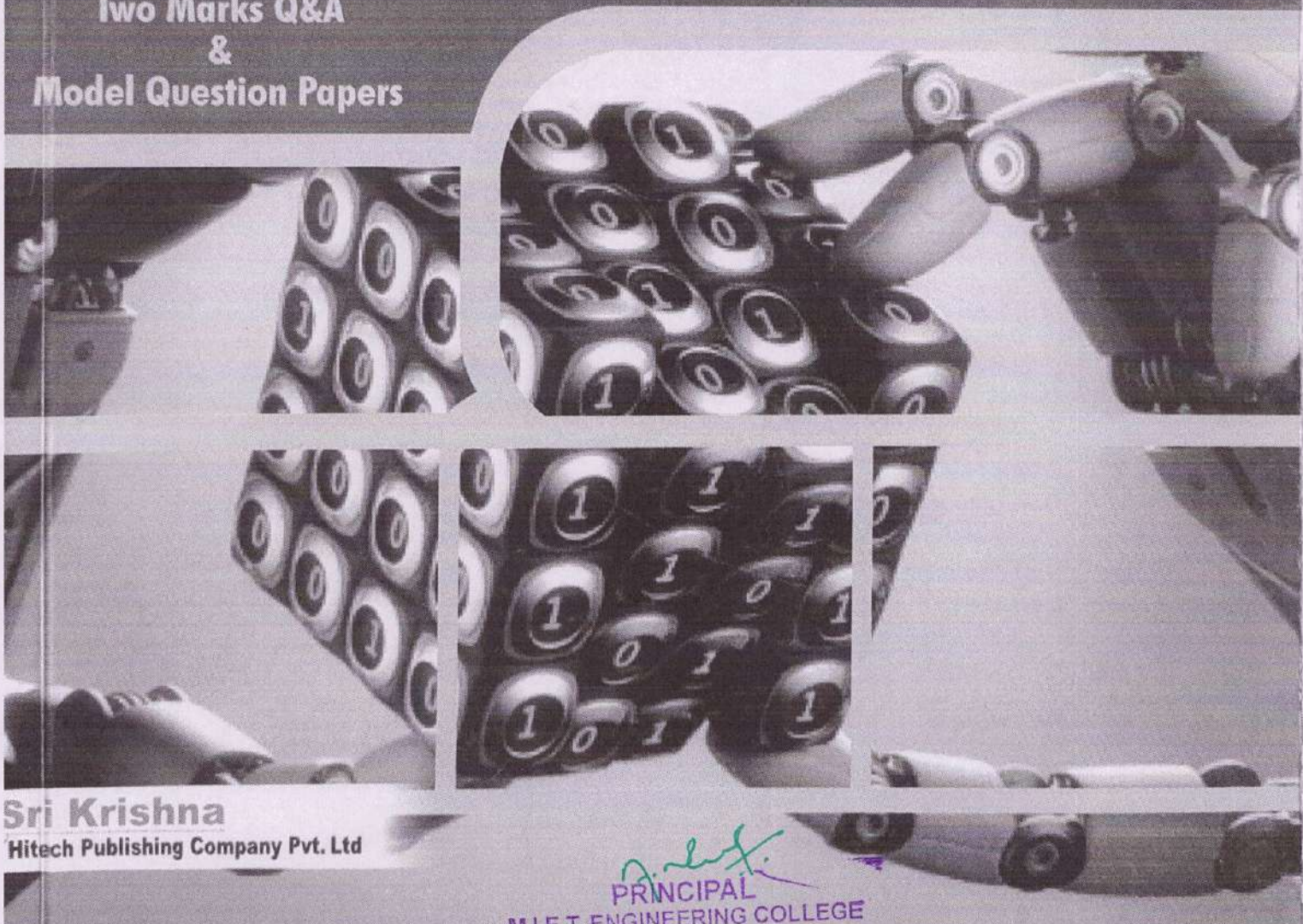
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Regulation 2017
(CBCS Pattern)

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SYLLABUS

ME8791 - MECHATRONICS

UNIT - I : INTRODUCTION

Introduction to Mechatronics - Systems - Concepts of Mechatronics approach - Need for Mechatronics - Emerging areas of Mechatronics - Classification of Mechatronics. Sensors and Transducers: Static and dynamic Characteristics of Sensor, Potentiometers - LVDT - Capacitance sensors - Strain gauges - Eddy current sensor - Hall effect sensor - Temperature sensors - Light sensors.

UNIT - II : 8085 MICROPROCESSOR AND 8051 MICROCONTROLLER

Introduction - Architecture of 8085 - Pin Configuration - Addressing Modes - Instruction set, Timing diagram of 8085 - Concepts of 8051 microcontroller - Block diagram.

UNIT - III : PROGRAMMABLE PERIPHERAL INTERFACE

Introduction - Architecture of 8255, Keyboard interfacing, LED display interfacing, ADC and DAC interface, and Temperature Control - Stepper Motor Control - Traffic Control interface.

UNIT - IV : PROGRAMMABLE LOGIC CONTROLLER

Introduction - Basic structure - Input and output processing - Programming - Mnemonics - Timers, counters and internal relays - Data handling - Selection of PLC.

UNIT - V : ACTUATORS AND MECHATRONIC SYSTEM DESIGN

Types of Stepper and Servo motors - Construction - Working Principle - Advantages and Disadvantages. Design process-stages of design process - Traditional and Mechatronics design concepts - Case studies of Mechatronics systems - Pick and place Robot - Engine Management system - Automatic car park barrier.


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108

CONTENTS

UNIT - 1 : INTRODUCTION 1.1 - 1.94

1.1	Introduction	1.1
1.1.1	Foundations of Mechatronics	1.2
1.1.2	System.....	1.3
1.1.3	Open Loop Control System	1.4
1.1.4	Advantages of Open Loop System	1.5
1.1.5	Disadvantages of Open Loop System	1.5
1.1.6	Closed Loop Control System	1.5
1.1.7	Advantages of Closed Loop System	1.8
1.1.8	Disadvantages of Closed Loop System.....	1.8
1.2	Mechatronic System	1.8
1.2.1	Mechatronic System Elements	1.9
1.2.2	Mechatronic Systems Examined	1.10
1.2.3	Concepts of Mechatronics Approach	1.15
1.3	Measurement Systems	1.16
1.3.1	Measurement System-Digital Thermometer.....	1.17
1.3.2	Application of Mechatronics	1.18
1.4	Emerging Areas of Mechatronics.....	1.19
1.4.1	Classification of Mechatronics	1.20
1.5	Sensors and Transducers.....	1.21
1.5.1	Static Characteristics.....	1.22
1.5.2	Dynamic Performance Characteristics.....	1.26
1.5.3	Displacement and Position sensors.....	1.31
1.5.4	Displacement Measurement	1.37
1.5.5	Force Measurement	1.37
1.5.6	Pressure Measurement	1.38

1.6 Proximity Sensors	1.44
1.7 Optical Encoders	1.48
1.7.1 Incremental Encoder	1.50
1.8 Hall Effect Sensor	1.54
1.9 Resolver	1.55
1.10 Range Sensor	1.56
1.11 Velocity Sensor	1.58
1.12 Motion Sensors	1.62
1.13 Force Sensor	1.64
1.13.1 Strain Gauge	1.65
1.14 Fluid Sensors	1.68
1.14.1 Fluid Pressure Sensors	1.68
1.14.2 Tube Pressure Sensor	1.70
1.14.4 Tactile Sensors	1.72
1.15 Liquid Flow Sensors	1.72
1.16 Temperature Sensors	1.74
1.16.2 Thermodiodes and Transistors	1.75
1.17 Types of Temperature Sensors	1.76
1.17.2 Applications of Thermocouples	1.82
1.18 Light Sensors	1.82
1.19 Safety Equipment	1.86
Two Marks Questions with Answers	1.86
Review Questions	1.94

UNIT - 2 : 8085 MICROPROCESSOR

AND 8051 MICROCONTROLLER 2.1 - 2.80

2.1 Introduction	2.1
2.2 Microprocessor	2.1
2.2.1 General Architecture of a Microcomputer System	2.2
2.3 Classification of Microprocessors	2.6
2.3.1 Types of Microprocessors	2.6
2.3.2 Number Systems	2.7

2.4	8085 Microprocessor	2.9
2.4.1	Architecture of 8085	2.10
2.5	8085 -Pin Configuration	2.17
2.6	Instruction Set	2.22
2.6.1	Classification Based on Length	2.23
2.7	Instruction Set of 8085	2.24
2.8	Timing Diagram of 8085	2.33
2.8.1	Rules to Identify Number of Machine Cycles in an Instruction	2.34
2.8.2	Timing Diagram	2.34
2.8.3	Opcode Fetch	2.34
2.9	8085 Interrupts	2.44
2.10	Microcontroller	2.45
2.10.1	Types of Microcontrollers	2.49
2.10.2	Microcontroller Chips	2.50
2.10.3	Features of Modern Microcontrollers	2.50
2.10.4	Internal Structure of a Microcontroller	2.50
2.11	Introduction of 8051 microcontroller	2.52
2.12	Block diagram of 8051 microcontroller (Architecture)	2.53
2.12.1	Major Components of the 8051 Microcontroller	2.53
2.13	Addressing Modes	2.59
2.14	I/O Port Configuration	2.63
2.15	8051 Pin Diagram	2.67
	Two Marks Questions with Answers	2.70
	Review Questions	2.80

UNIT - 3 : PROGRAMMABLE PERIPHERAL INTERFACE 3.1 - 3.64

3.1	Introduction	3.1
3.1.1	Programmable Peripheral Interface (PPI)	3.1
3.2	8255 Pin Configuration	3.2
3.3	Block Diagram of 8255A (Architecture)	3.4
3.3.1	Operational Description	3.7

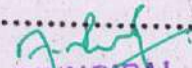
3.4	Interfacing	3.16
3.4.1	Interface Specification	3.16
3.4.2	Components of Interface	3.17
3.4.3	Data Transfer Schemes	3.17
3.5	Keyboard Interfacing	3.19
3.5.1	Keyboard Circuit Connections and Interfacing	3.21
3.6	Display Interfacing	3.24
3.7	Seven-Segment LEDs	3.24
3.7.1	Driving a 7-Segment Display	3.28
3.7.2	Seven-Segment Display Characteristics	3.30
3.7.3	Specifications	3.30
3.8	Interfacing of LED Display	3.30
3.9	Analog to Digital Data Converters Interfacing (ADC Interfacing)	3.33
3.9.1	ADC 0808/0809	3.34
3.9.2	Pin Diagram	3.35
3.9.3	Pin Description	3.36
3.9.4	Interfacing of ADC	3.37
3.10	Interfacing Digital to Analog Converters (DAC Interfacing)	3.39
3.11	Pin Diagram of AD 7523	3.42
3.12	Temperature Control System	3.44
3.12.1	Introduction	3.44
3.12.2	Temperature Controller Applications	3.45
3.13	Temperature Controller Interfacing	3.47
3.14	Stepper Motor	3.48
3.14.1	Switching Sequence of Stepper Motor	3.50
3.14.2	Step Angle	3.51
3.15	Stepper Motor Interfacing	3.52
3.16	Traffic Light Control Interfacing	3.53
3.16.1	Colors of Traffic Light Control	3.53
3.17	Interfacing Traffic Light with 8085	3.55
	Two Marks Questions with Answers	3.58
	Review Questions	3.64

UNIT - 4 : PROGRAMMABLE LOGIC CONTROLLER.....4.1 - 4.94

4.1	Introduction	4.1
4.1.1	Programmable Logic Controller History	4.2
4.2	Block diagram of PLC system	4.3
4.3	PLC Basic Architecture	4.5
4.3.1	Programming PLCs	4.11
4.3.2	Brands of PLC	4.11
4.3.3	PLC Size	4.12
4.4	Input and Output Devices	4.12
4.4.1	Input Devices	4.12
4.4.2	Output Devices	4.21
4.5	Input and Output Processing	4.27
4.5.1	Input Units	4.28
4.5.2	Output Units	4.31
4.5.3	Processing Inputs	4.35
4.5.4	I/O Addresses	4.36
4.6	Programming	4.37
4.6.1	Programming Language	4.37
4.7	PLC Ladder Programming	4.40
4.7.1	Electrical Relay Diagram Symbols	4.42
4.7.2	Ladder Logic Symbols	4.42
4.7.3	Logic Functions	4.45
4.8	Latching	4.51
4.9	PLC Programs	4.52
4.10	Mnemonic Code	4.66
4.11	Timers	4.70
4.12	Counters	4.76
4.13	Internal Relays	4.80
4.14	Data Handling	4.82
4.15	PLC Applications	4.85
4.16	Selection of PLCs	4.86
	Two Marks Questions with Answers	4.89
	Review Questions	4.94

UNIT - 5 : ACTUATORS AND MECHATRONIC SYSTEM DESIGN 5.1 - 5.64

5.1	Introduction	5.1
5.1.1	Actuators	5.1
5.1.2	Classification and Selection of Actuators	5.2
5.2	Comparison between a Hydraulic and a Pneumatic System	5.6
5.3	Comparison of Different Power Systems	5.7
5.4	Stepper Motor	5.8
5.4.1	Introduction	5.8
5.4.2	Block Diagram of Stepper Motor System	5.8
5.4.3	Stepper Motor Basics	5.9
5.4.4	DC Motors Vs. Stepper Motors	5.10
5.4.5	Types of Stepper Motors	5.11
5.4.6	Different Modes of Excitation	5.18
5.4.7	Advantages of Stepper Motor	5.21
5.4.8	Disadvantages of Stepper Motor	5.21
5.4.9	Applications of Stepper Motor	5.22
5.5	Servomotor	5.24
5.5.1	Servo Motor Theory	5.24
5.5.2	Servo Mechanism	5.25
5.5.3	Working Principle of Servo Motor	5.25
5.5.4	Servo Motor Control	5.26
5.6	AC Servomotor	5.28
5.6.1	Constructions of AC Servomotor	5.29
5.6.2	Operating Principle	5.30
5.6.3	Torque-Speed Characteristics	5.31
5.6.4	Features of AC Servomotor	5.33
5.6.5	Advantages of AC Servomotor	5.34
5.6.6	Disadvantages of AC Servomotor	5.34
5.6.7	Applications of AC Servomotor	5.34

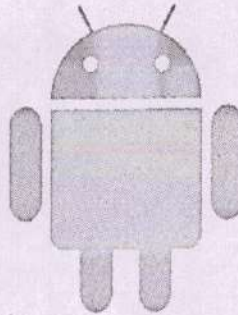

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5.7	DC Servomotor	5.35
5.7.1	Field Controlled DC Servomotor Theory	5.35
5.7.2	Armature Controlled DC Servomotor Theory	5.37
5.7.3	Advantages of DC servomotor	5.38
5.7.4	Disadvantages of DC servomotor	5.39
5.7.5	Difference between the DC Servo motor and AC Servomotor	5.39
5.7.6	Difference between Stepper motor and Servomotor	5.40
5.8	Designing Process	5.40
5.9	Stages in Designing Mechatronic Systems	5.42
5.10	Traditional and Mechatronics Designs	5.44
5.10.1	Difference between Traditional Approach and Mechatronics Approach	5.46
5.11	Case Studies in Mechatronic Systems	5.47
5.11.1	A Pick and Place Robot	5.47
5.11.2	Engine Management System	5.50
5.11.3	Automatic Car Park Barrier	5.55
	Two Marks Questions with Answers	5.60
	Review Questions	5.64
Model Question Paper		MQP.1 – MQP.2


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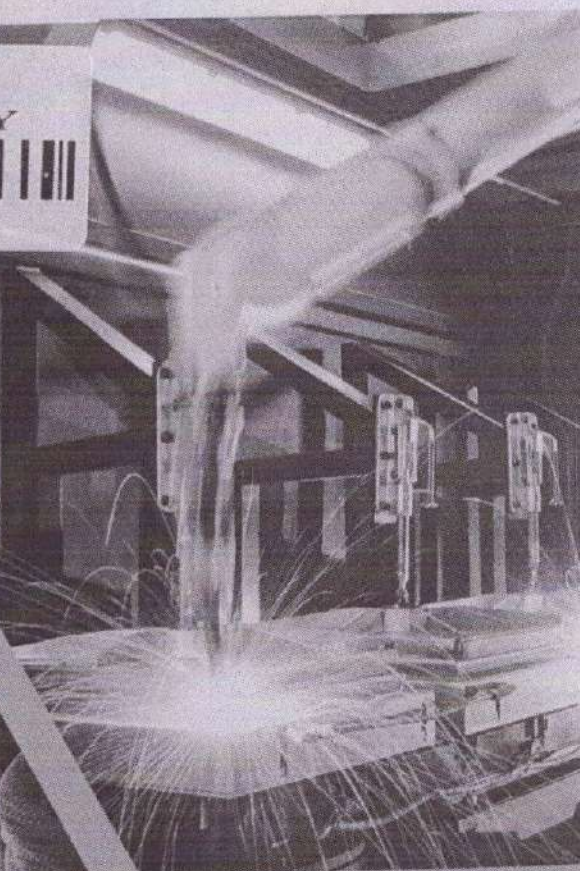
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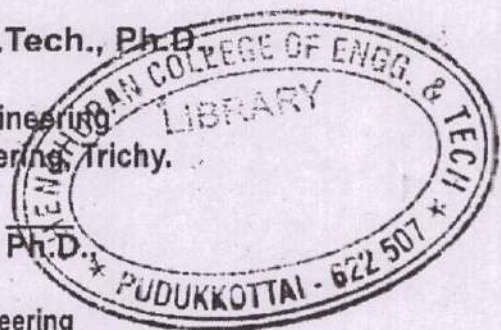
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SYLLABUS

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9

UNIT I: METAL CASTING PROCESSES

Sand Casting : Sand Mould – Type of patterns - Pattern Materials – Pattern allowances – Moulding sand Properties and testing – Cores –Types and applications – Moulding machines – Types and applications; **Melting furnaces** : Blast and Cupola Furnaces; **Principle of special casting processes**: Shell - investment – Ceramic mould – Pressure die casting - Centrifugal Casting - CO₂ process – Stir casting; **Defects in Sand casting**.

9

UNIT II: JOINING PROCESSES

Operating principle, basic equipment, merits and applications of : Fusion welding processes : Gas welding - Types – Flame characteristics; Manual metal arc welding – Gas Tungsten arc welding - Gas metal arc welding – Submerged arc welding – Electro slag welding; **Operating principle and applications of** : Resistance welding - Plasma arc welding – Thermit welding – Electron beam welding – Friction welding and Friction Stir Welding; Brazing and soldering; **Weld defects**: types, causes and cure.

9

UNIT III: METAL FORMING PROCESSES

Hot working and cold working of metals – Forging processes – Open, impression and closed die forging – forging operations. Rolling of metals – Types of Rolling – Flat strip rolling – shape rolling operations – Defects in rolled parts. Principle of rod and wire drawing – Tube drawing – Principles of Extrusion – Types – Hot and Cold extrusion.

9

UNIT IV: SHEET METAL PROCESSES

Sheet metal characteristics – shearing, bending and drawing operations – Stretch forming operations – Formability of sheet metal – Test methods – special forming processes-Working principle and applications – Hydro forming – Rubber pad forming – Metal spinning- Introduction of Explosive forming, magnetic pulse forming, peen forming, Super plastic forming – Micro forming

9

UNIT V: MANUFACTURE OF PLASTIC COMPONENTS

Types and characteristics of plastics – Moulding of thermoplastics – working principles and typical applications – injection moulding – Plunger and screw machines – Compression moulding, Transfer Moulding – Typical industrial applications – introduction to blow moulding – Rotational moulding – Film blowing – Extrusion – Thermoforming, – Bonding of Thermoplastics.

TOTAL: 45 PERIODS

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CONTENTS

UNIT - I:	METAL CASTING PROCESSES	1.1 - 1.105
1.1	Introduction.....	1.1
1.2	Metal Casting Processes.....	1.1
1.3	Sand Casting.....	1.2
1.3.1	Sand Mould.....	1.2
1.3.2	Casting Terms.....	1.4
1.3.3	Steps in Making Sand Castings.....	1.5
1.4	Pattern.....	1.6
1.4.1	Types of patterns.....	1.6
1.5	Pattern Material.....	1.11
1.6	Pattern Allowance.....	1.14
1.7	Moulding Sand Properties.....	1.18
1.8	Classification of Moulding Sand.....	1.20
1.9	Moulding Sand Composition.....	1.21
1.9.1	Base Sand.....	1.21
1.9.2	Binder.....	1.21
1.9.3	Moisture.....	1.22
1.9.4	Additives.....	1.22
1.10	Tools and Equipment for Hand Moulding.....	1.23
1.10.1	Sand Preparation Tools and Equipments.....	1.23
1.10.2	Moulding Flasks.....	1.24
1.10.3	Moulders Tools.....	1.24
1.11	Moulding Process.....	1.25
1.12	Sand Testing.....	1.28
1.13	Core.....	1.36
1.13.1	Chaplets.....	1.38
1.13.2	Cheeks.....	1.39
1.13.3	Core characteristics.....	1.39
1.14	Types of Cores.....	1.40
1.14.1	Green-sand cores.....	1.40
1.14.2	Dry-sand cores.....	1.40
1.14.3	Horizontal core.....	1.41

1.14.4	Vertical core.....	1.41
1.14.5	Balancing core.....	1.42
1.14.6	Hanging core.....	1.42
1.15	Types of Core Boxes.....	1.43
1.15.1	Half core box.....	1.43
1.15.2	Dump core box.....	1.43
1.15.3	Split core box.....	1.44
1.15.4	Strickle core box.....	1.44
1.15.5	Gang core box.....	1.45
1.16	Core Making Process.....	1.45
1.16.1	Core dryers.....	1.45
1.16.2	Core venting.....	1.46
1.16.3	Core baking.....	1.46
1.17	Core Ovens.....	1.47
1.17.1	Continuous ovens.....	1.47
1.17.2	Batch type ovens.....	1.47
1.17.3	Dielectric baking ovens.....	1.47
1.17.4	Core coatings.....	1.48
1.18	Moulding Machine.....	1.48
1.18.1	Types of moulding machine.....	1.49
1.19	Melting Furnaces.....	1.51
1.19.1	Cupola Furnace.....	1.52
1.19.2	Blast Furnace Process.....	1.55
1.19.3	Direct Fuel-Fired Furnaces.....	1.56
1.19.4	Crucible Furnaces.....	1.57
1.19.5	Electric-arc furnaces.....	1.59
1.19.6	Induction furnaces.....	1.61
1.20	Principle of Special Casting Processes.....	1.62
1.21	Different Casting Processes.....	1.63
1.22	Shell Casting.....	1.64
1.22.1	Shell Moulding Process.....	1.66
1.22.2	Application.....	1.67
1.22.3	Advantage.....	1.67
1.22.4	Disadvantage.....	1.67

1.23 Investment Casting	1.68
1.23.1 Application	1.70
1.23.2 Advantages	1.71
1.23.3 Disadvantages	1.71
1.24 Ceramic Mould Casting.....	1.71
1.24.1 Ceramic Mould Casting Process	1.71
1.24.2 Advantages	1.72
1.24.3 Disadvantage	1.72
1.25 Permanent Mould Casting.....	1.73
1.25.1 Advantages	1.74
1.25.2 Disadvantages.....	1.74
1.25.3 Application	1.75
1.26 Pressure Die Casting	1.75
1.26.1 Hot-chamber die casting	1.76
1.26.2 Cold-chamber die casting	1.77
1.27 Centrifugal Casting	1.78
1.27.1 Application	1.79
1.27.2 Advantages	1.79
1.27.3 Disadvantages.....	1.79
1.28 Semi-centrifugal Casting.....	1.79
1.29 Continuous Casting	1.80
1.29.1 Application	1.81
1.29.2 Advantages	1.81
1.29.3 Disadvantages.....	1.81
1.30 CO ₂ Process	1.81
1.30.1 Introduction	1.81
1.30.2 Process.....	1.82
1.30.3 Applications.....	1.83
1.30.4 Advantages.....	1.83
1.31 Stir Casting Method	1.83
1.32 Operations Required in Sand Casting After The Casting Is Removed From The Mould	1.83
1.33 Different Types of Castings Defects.....	1.85
1.33.1 Surface defects.....	1.86

1.33.2 Internal Defects.....	1.89
1.33.3 Visible defects.....	1.91
1.34 Steels More Difficult to Cast Than Cast Irons.....	1.95
Two Mark Questions With Answers	1.96
Review Questions.....	1.104
UNIT - II:	JOINING PROCESSES
	2.1 - 2.97
2.1 Introduction.....	2.1
2.2 Types of Welding Processes.....	2.1
2.2.1 Solid-state Welding Processes	2.2
2.2.2 Liquid State (Fusion) Welding Processes	2.2
2.2.3 Solid / Liquid State Bonding.....	2.3
2.3 Classification of Welding Processes.....	2.3
2.4 Selection of Welding Process.....	2.4
2.5 Gas Welding.....	2.5
2.5.1 Working principle.....	2.5
2.5.2 Oxy-Acetylene welding	2.6
2.5.3 Types of flames.....	2.8
2.5.4 Gas Welding Equipment.....	2.10
2.5.5 Gas cutting (or) Flame cutting	2.12
2.6 Metal Arc Welding.....	2.13
2.6.1 Working principle.....	2.14
2.6.2 Advantages	2.15
2.6.3 Limitations.....	2.16
2.7 General Safety Precautions	2.16
2.8 Carbon Arc Welding	2.17
2.8.1 Comparison of A.C. and D.C. arc welding	2.18
2.8.2 Welding equipment's.....	2.18
2.8.3 Functions of the Electrode Coating.....	2.24
2.8.4 Electrode Classification and Coding.....	2.24
2.9 Gas Tungsten Arc Welding (GTAW)	2.25
2.9.1 TIG Welding.....	2.25
2.9.2 Working principle.....	2.27
2.9.3 Equipment for gas tungsten arc (GTAW) welding.....	2.28
2.9.4 Shielding gases	2.32

2.9.5 Advantages	2.33
2.9.6 Applications.....	2.33
2.10 Gas Metal Arc Welding (GMAW)	2.34
2.10.1 MIG Welding	2.34
2.10.2 Working principle.....	2.34
2.11 Submerged Arc Welding.....	2.36
2.11.1 Working principle.....	2.36
2.11.2 Components of SAW System	2.37
2.11.3 Welding parameters of SAW	2.39
2.11.4 Advantages	2.40
2.11.5 Limitations.....	2.40
2.11.6 Applications.....	2.41
2.12 Electroslag Welding.....	2.41
2.12.1 Working principle.....	2.41
2.12.2 Advantages:	2.43
2.12.3 Disadvantages.....	2.43
2.12.4 Applications.....	2.43
2.13 Resistance Welding.....	2.43
2.13.1 Working principle.....	2.43
2.13.2 Resistance Spot Welding	2.44
2.13.3 Resistance Seam Welding	2.47
2.13.4 Resistance Projection welding	2.48
2.13.5 Resistance percussion welding	2.49
2.14 Plasma Arc Welding Process (PAW)	2.50
2.14.1 Working principle.....	2.50
2.14.2 Equipment.....	2.53
2.14.3 Plasma Arc Processes	2.54
2.14.4 Advantages	2.54
2.14.5 Disadvantages.....	2.54
2.14.6 Applications.....	2.55
2.15 Thermit Welding	2.55
2.15.1 Working principle.....	2.56
2.15.2 Applications.....	2.57
2.16 Electron Beam Welding (EBW).....	2.57

2.16.1 Applications.....	2.58
2.16.2 Advantages	2.59
2.16.3 Disadvantages	2.59
2.17 Friction Welding (FRW)	2.59
2.18 Friction-Stir Welding (FSW).....	2.61
2.18.1 Advantages of friction stir welding.....	2.62
2.18.2 Disadvantages of friction stir welding	2.62
2.18.3 Applications.....	2.63
2.19 Explosion Welding.....	2.63
2.20 Ultrasonic Welding (USW)	2.64
2.21 Brazing.....	2.65
2.21.1 Method of brazing.....	2.66
2.21.2 Types of brazing	2.67
2.21.3 Advantages	2.71
2.21.4 Disadvantages.....	2.71
2.21.5 Applications.....	2.71
2.22 Soldering	2.72
2.22.1 Classification of solder	2.73
2.22.2 Method of soldering.....	2.73
2.22.3 Types of soldering	2.74
2.23 Types of Weld Joints.....	2.76
2.23.1 Standard welds and ideographs.....	2.77
2.23.2 Welding Symbols	2.77
2.24 Causes and Cures of Common Welding Defects.....	2.78
Two Mark Questions With Answers	2.86
Review Questions.....	2.95

UNIT - III:	METAL FORMING PROCESSES	3.1 - 3.110
--------------------	--------------------------------	--------------------

3.1 Introduction.....	3.1
3.2 Fundamentals of Metal Working.....	3.2
3.3 Hot Working.....	3.3
3.3.1 Hot Working Processes.....	3.5
3.3.2 Advantages	3.5
3.3.3 Disadvantages	3.6
3.4 Cold Working.....	3.6

3.4.1	Cold Working Processes.....	3.7
3.4.2	Advantages of cold working.....	3.9
3.4.3	Disadvantages of cold working.....	3.9
3.5	Forging	3.9
3.5.1	Grain orientation in forging.....	3.10
3.5.2	Forgeability.....	3.10
3.5.3	Heating devices (Hearth).....	3.11
3.5.4	Fuels used in forging shop.....	3.12
3.5.5	Forging Temperatures.....	3.12
3.5.7	Common Hand Forging Tools.....	3.13
3.5.8	Hammers.....	3.17
3.5.9	Forging Methods.....	3.21
3.5.10	Hand forging.....	3.21
3.5.11	Forging Operations.....	3.22
3.6	Cold Forging	3.25
3.7	Types of Forging Processes.....	3.26
3.7.1	Open Die Hammer or Smith Forging.....	3.26
3.7.2	Impression-Die Drop or Closed-Die Forging.....	3.28
3.7.3	Flash less forging or precision forging.....	3.31
3.7.4	Electro-upsetting.....	3.32
3.7.5	Radial forging.....	3.32
3.7.6	Roll Forging	3.33
3.7.7	Hobbing.....	3.34
3.7.8	Isothermal forging	3.35
3.7.9	Orbital forging or rotary forging.....	3.36
3.7.10	Swaging.....	3.37
3.7.11	Powder metal (P/M) forging.....	3.38
3.7.12	Upsetting or Heading	3.39
3.7.13	Nosing.....	3.40
3.7.14	Coining	3.41
3.7.15	Ironing	3.41
3.8	Types of Forging Machines.....	3.42
3.8.1	Hydraulic Presses.....	3.43
3.8.2	Mechanical Crank	3.45
3.8.3	Screw Presses.....	3.48

3.8.4 Hammers.....	3.49
3.9 Rolling	3.54
3.9.1 Nomenclature of Rolled Products	3.57
3.10 Rolls and Roll Pass Design.....	3.59
3.11 Classifications of Rolling Process	3.60
3.12 Types of Rolling Processes	3.60
3.12.1 Continuous rolling	3.61
3.12.2 Transverse rolling	3.62
3.12.3 Shape rolling.....	3.63
3.12.4 Flat strip rolling	3.65
3.12.5 Ring rolling.....	3.68
3.12.6 Thread rolling	3.69
3.12.7 Powder rolling	3.70
3.13 Types of Rolling Mills	3.71
3.14 Piercing or Seamless Tubing (or) Mannesmann Process.....	3.75
3.15 Rolling Defects.....	3.77
3.16 Rod and Tube Drawing	3.80
3.17 Wire Drawing.....	3.82
3.17.1 Process Characteristics.....	3.83
3.17.2 Drawing Equipment.....	3.85
3.18 Extrusion	3.88
3.18.1 Classification of Extrusion Processes	3.90
3.18.2 Hot Extrusion.....	3.95
3.18.3 Cold Extrusion.....	3.96
3.18.4 Extrusion Steps	3.96
3.18.5 Economics of extrusion	3.98
3.18.6 Controlling Friction in Extrusion.....	3.99
3.18.7 Die Materials.....	3.99
3.19 Hot Drawing.....	3.100
3.20 Hot Spinning	3.100
3.21 Extrusion Defects	3.101
3.22 Solved Problems.....	3.102
Two Mark Questions With Answers	3.104
Review Questions.....	3.109

UNIT - IV:	SHEET METAL PROCESSES	4.1 - 4.47
4.1	Sheet Metal Characteristics	4.2
4.2	Sheet Metal Forming Processes.....	4.3
4.2.1	Classification of Sheet Metal Parts	4.4
4.2.2	Shearing.....	4.5
4.2.3	Bending.....	4.7
4.2.4	Blanking and Punching.....	4.9
4.2.5	Deep Drawing.....	4.9
4.2.6	Dies and its Types.....	4.12
4.3	Stretch Forming.....	4.15
4.4	Formability.....	4.16
4.4.1	Formability Test.....	4.17
4.4.2	Cupping Tests	4.17
4.5	Special Forming Process	4.18
4.5.1	Hydroforming.....	4.18
4.5.2	Rubber Pad Forming Process.....	4.21
4.5.3	Metal Spinning.....	4.23
4.5.4	High Energy Rate Forming Processes.....	4.25
4.5.5	Explosive Forming.....	4.26
4.5.6	Electro Magnetic Forming	4.29
4.5.7	Electro Hydraulic Forming	4.33
4.5.8	Peen Forming.....	4.35
4.5.9	Superplastic Forming.....	4.37
4.5.10	Micro Forming.....	4.39
	Two Marks Questions With Answers.....	4.40
	Review Questions.....	4.45

UNIT - V:	MANUFACTURE OF PLASTIC COMPONENTS	5.1 - 5.38
5.1	Manufacture of Plastic Components.....	5.1
5.1.1	Types of Plastics	5.1
5.2	Thermoplastic Materials.....	5.4
5.3	Injection Moulding.....	5.7
5.3.1	Applications.....	5.8
5.3.2	Process Characteristics.....	5.8

5.3.3 Problems Encountered in Injection Moulding	5.10
5.4 Reciprocating Screw Machine.....	5.11
5.5 Compression Moulding.....	5.15
5.6 Transfer Moulding	5.16
5.6.1 Advantages of Transfer Moulding Over Compression Moulding	5.16
5.7 Deflashing	5.18
5.8 Plastic Extrusion.....	5.18
5.9 Thermoforming	5.19
5.9.1 Vacuum Thermoforming	5.20
5.9.2 Pressure Thermoforming	5.21
5.9.3 Mechanical Thermoforming	5.22
5.10 Blow Moulding	5.23
5.11 Introduction to Rotational Moulding.....	5.24
5.11.1 The Process.....	5.25
5.11.2 Typical Applications for Rotationally Moulded Products	5.26
5.11.3 Advantages and Disadvantages.....	5.27
5.11.4 Products	5.28
5.12 Film Blowing	5.28
5.13 Bonding of Thermoplastics	5.29
5.13.1 Solvent Bonding	5.29
5.13.2 Adhesive Bonding	5.30
Two Mark Questions With Answers	5.32
Review Questions.....	5.37
Anna University Solved Question Papers	1-25

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For Students of Sixth Semester B.E. / B.Tech
Common to Mechanical and Production Engineering
As per the Latest Anna University Syllabus


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SYLLABUS

ANNA UNIVERSITY **ME6004 Unconventional Machining Processes** For VI Semester B.E./B.Tech. Students (Common to Mechanical and Production Engineering)

3003

OBJECTIVES:

To learn about various unconventional machining processes, the various process parameters and their influence on performance and their applications.

UNIT I INTRODUCTION

6

Unconventional machining Process – Need – classification – Brief overview.

UNIT II MECHANICAL ENERGY BASED PROCESSES

9

Abrasive Jet Machining – Water Jet Machining – Abrasive Water Jet Machining - Ultrasonic Machining. (AJM, WJM, AWJM and USM). Working Principles – equipment used – Process Parameters – MRR- Applications.

UNIT III ELECTRICAL ENERGY BASED PROCESSES

9

Electric Discharge Machining (EDM)- working Principle-equipments-Process Parameters-Surface. Finish and MRR- electrode / Tool – Power and control Circuits-Tool Wear – Dielectric – Flushing – Wire cut EDM – Applications.

UNIT IV CHEMICAL AND ELECTRO-CHEMICAL ENERGY BASED PROCESSES

11

Chemical machining and Electro-Chemical machining (CHM and ECM)- Etchants – Maskant - techniques of applying maskants - Process Parameters – Surface finish and MRR-Applications. Principles of ECM- equipments- Surface Roughness and MRR Electrical circuit-Process Parameters-ECG and ECH - Applications.

UNIT V THERMAL ENERGY BASED PROCESSES

10

Laser Beam machining and drilling (LBM), plasma Arc machining (PAM) and Electron Beam. Machining (EBM). Principles – Equipment –Types - Beam control techniques – Applications.

TOTAL: 45 PERIODS

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132

CONTENTS

Unit - I : UNCONVENTIONAL MACHINING PROCESSES

1.	INTRODUCTION	1.1
1.1	TRADITIONAL MACHINING	1.2
1.2	NON-TRADITIONAL MACHINING (NTM)	1.4
1.3	CHARACTERISTICS OF CONVENTIONAL MACHINING	1.5
1.4	CHARACTERISTICS OF UNCONVENTIONAL MACHINING ...	1.5
1.5	NEED FOR NON TRADITIONAL MACHINING	1.6
1.6	CLASSIFICATION OF NTM PROCESSES	1.7
1.6.1	Mechanical Machining	1.8
1.6.2	Thermal Machining	1.9
1.6.3	Chemical and Electrochemical Machining.	1.10
1.6.4	Electrical Energy	1.11
1.7	COMPARISON BETWEEN CONVENTIONAL AND NON- CONVENTIONAL MACHINING PROCESSES	1.12
1.8	ADVANTAGES OF UNCONVENTIONAL MACHINING PROCESSES	1.14
1.9	DISADVANTAGES OF UNCONVENTIONAL MACHINING PROCESSES	1.15
1.10	APPLICATION OF UNCONVENTIONAL MACHINING PROCESSES	1.16
	Two Mark Questions and Answers	1.21

Unit - II : MECHANICAL ENERGY BASED PROCESSES

2.	INTRODUCTION	2.1
2.1	ABRASIVE JET MACHINING	2.2
2.1.1	Working Principle	2.2
2.1.2	Machining Process	2.2
2.1.3	AJM Process Parameters.	2.4
2.1.4	Machining Charecteristics	2.5
2.1.5	Material Removal Rate	2.6
2.1.6	Applications	2.10
2.1.7	Advantages	2.11
2.1.8	Limitations	2.12
2.2	WATER JET MACHINING	2.13
2.2.1	Working Principle	2.13
2.2.2	Machining Process	2.13
2.2.3	Process Parameters	2.16
2.2.4	Applications	2.18
2.2.5	Advantages of water Jet Cutting	2.18
2.2.6	Disadvantages of water Jet Cutting	2.19
2.3	Abrasive Water Jet Machining	2.19
2.3.1	Working Principle	2.19
2.3.2	Machining Process	2.20
2.3.3	Process Characteristics	2.22
2.3.4	Applications	2.26
2.3.5	Advantages of Abrasive Water Jet Cutting	2.26
2.3.6	Limitations of Abrasive Water Jet Cutting	2.26

2.4	ULTRASONIC MACHINING	2.27
2.4.1	Working Principle	2.27
2.4.2	Machining Process	2.28
2.4.3	Process Parameters	2.32
2.4.4	Process Capability	2.33
2.4.5	Mechanical Amplifier	2.34
2.4.6	Material Removal Models in USM	2.34
2.4.7	Machining Characteristics	2.36
2.4.8	Tool Feed Mechanism	2.43
2.4.9	Dimensional Accuracy	2.44
2.4.10	Surface quality	2.45
2.4.11	Applications	2.46
2.4.12	Advantage of USM	2.46
2.4.13	Disadvantages of USM	2.47
	Two Mark Questions and Answers	2.48

Unit - III : ELECTRICAL ENERGY BASED PROCESSESS

3.	INTRODUCTIONS	3.1
3.1	ELECTRIC DISCHARGE MACHINING	3.1
3.1.1	Working Principle	3.1
3.1.2	Machining Process	3.2
3.1.3	EDM Electrodes.	3.5
3.1.4	Electrode Wear	3.6
3.1.5	Dielectric Fluids	3.8
3.1.6	Power generation Circuit and their Working Principles	3.10
3.1.7	Application of EDM	3.13
3.1.8	Advantages of EDM	3.14

3.1.9	Limitations of EDM	3.15
3.2	WIRE EDM	3.15
3.2.1	Tool Feed Mechanism	3.17
3.2.2	Dielectric Fluid and Spray Mechanism	3.17
3.2.3	Application of WCEDM	3.17
3.2.4	Advantages of WCEDM	3.18
3.2.5	Disadvantages and Limitations of WCEDM	3.18
	Two Mark Questions and Answers	1.19

Unit - IV : CHEMICAL AND ELECTRO CHEMICAL ENERGY BASED PROCESSES

4.	INTRODUCTIONS	4.1
4.1	CHEMICAL MACHINING	4.2
4.1.1	Working Principle of CHM	4.2
4.1.2	Process Details of CHM	4.2
4.1.3	Process Parameters.	4.5
4.1.4	Material Removal Rate	4.5
4.1.5	Application of CHM	4.7
4.1.6	Advantages of CHM	4.7
4.1.7	Disadvantages and Limitations of CHM	4.8
4.2	ELECTROCHEMICAL MACHINING (ECM)	4.8
4.2.1	Working Principle of ECM	4.8
4.2.2	Machining Process	4.9
4.2.3	Theory of ECM	4.13
4.2.4	Process Characteristics	4.15
4.2.5	Accuracy of ECM.	4.16

(x)

4.2.6	Material Removal Rate by ECM	4.16
4.2.7	Applications of ECM Process	4.21
4.2.8	Advantages of ECM Process	4.21
4.2.9	Disadvantages and Limitations of ECM	4.22
4.3	ELECTROCHEMICAL GRINDING	4.23
4.3.1	Working	4.24
4.3.2	Applications	4.26
4.3.3	Advantages and disadvantages	4.27
4.4	ELECTROCHEMICAL HONING	4.28
Two Mark Questions and answers		4.30

Unit - V : THERMAL ENERGY BASED PROCESSES

5.1	INTRODUCTIONS	5.1
5.1.1	LASER BEAM MACHINING	5.1
5.1.2	Working Principle of LBM	5.2
5.1.3	Machining Process	5.2
5.1.4	Material Removal Mechanism	5.4
5.1.5	Applications	5.5
5.1.6	Advantage of Laser Cutting	5.6
5.1.7	Limitations of Laser cutting	5.6
5.2	PLASMA ARC MACHINING (PAM)	5.7
5.2.1	Plasma	5.7
5.2.2	Working Principle of PAM	5.7
5.2.3	Machining Systems	5.7
5.2.4	Transferred or Direct Plasma arc system	5.8

5.2.5	Non Transferred or Indirect Plasma Jet.	5.9
5.2.6	Applications of PAM.....	5.11
5.2.7	Advantages of PAM Process	5.12
5.2.8	Disadvantages of PAM Process	5.12
5.3	ELECTRON BEAM MACHINING	5.12
5.3.1	Working Principle	5.12
5.3.2	Working of EBM.....	5.13
5.3.3	Material Removal Rate	5.15
5.3.4	Application	5.16
5.3.5	Advantages of EBM.....	5.16
5.3.6	Disadvantages.....	5.17
Two Mark Questions and Answers		5.18
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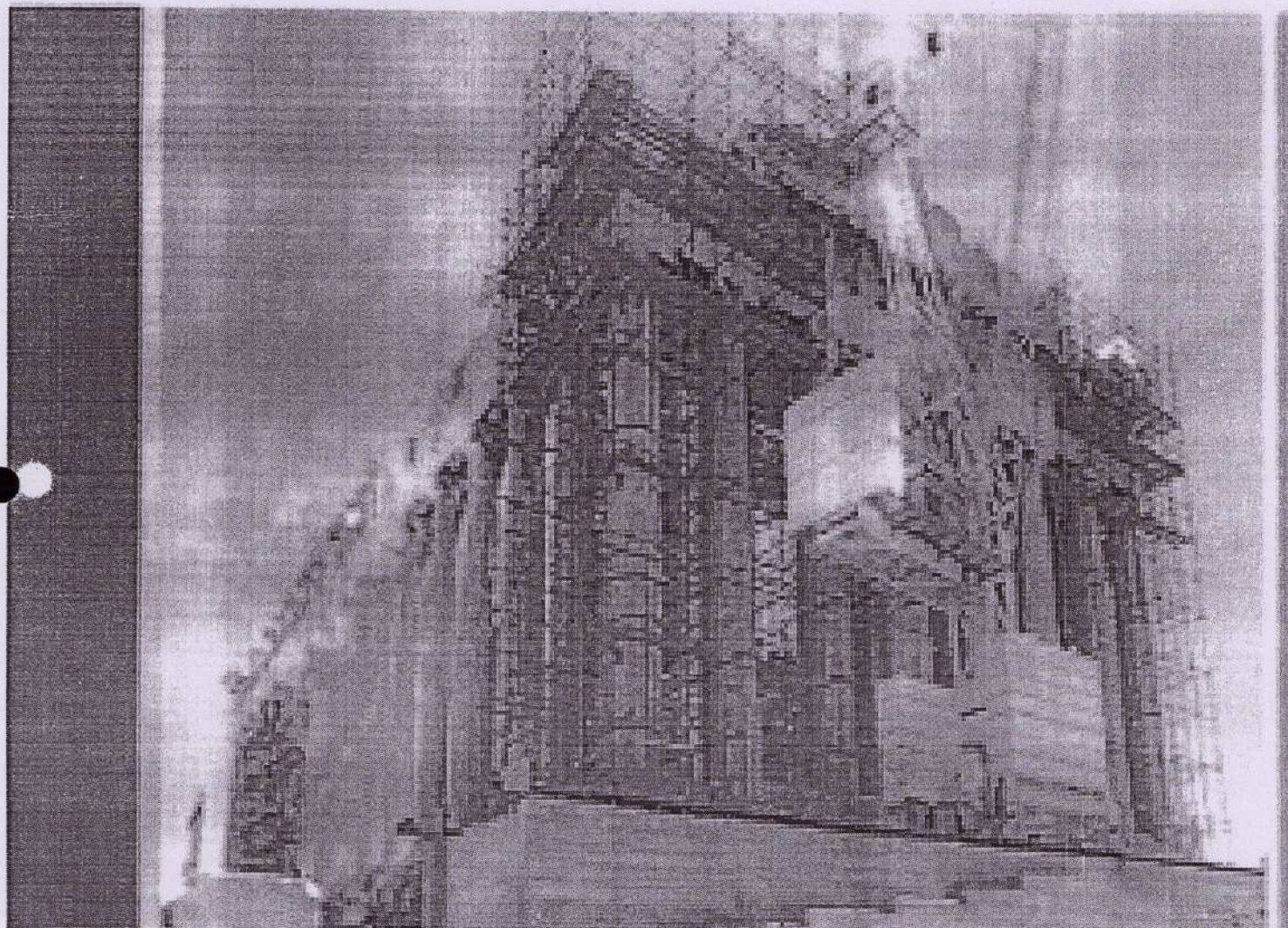
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REPAIR AND REHABILITATION OF STRUCTURES

For B.E. VIII Semester Civil Branch

As per the Latest Syllabus of Anna University, Chennai



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REPAIR AND REHABILITATION OF STRUCTURES

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CONTENTS

UNIT - 1

2

MAINTENANCE AND REPAIR STRATEGIES	1.1 - 1.44
1.1. INTRODUCTION	1.1
1.2. TERMS AND DEFINITIONS	1.2
1.2.1. Maintenance	1.2
1.2.2. Repair	1.2
1.2.3. Rehabilitation	1.3
1.2.4. Restoration	1.3
1.2.5. Retrofitting	1.3
1.2.6. Deterioration	1.3
1.2.7. Strengthening	1.3
1.3. BUILDING MAINTENANCE	1.4
1.3.1. Necessity of Maintenance	1.4
1.4. CLASSIFICATION OF MAINTENANCE	1.4
1.4.1. Preventive Maintenance	1.4
1.4.2. Remedial Maintenance	1.4
1.4.3. Routine Maintenance	1.5
1.4.4. Special Maintenance	1.6
1.5. MAINTENANCE OPERATIONS	1.6
1.6. IMPORTANCE OF MAINTENANCE	1.7
1.7. CAUSES WHICH NECESSITATE THE MAINTENANCE	1.8
1.7.1. Atmospheric Agencies	1.8
1.7.2. Normal Wear and Tear	1.9
1.7.3. Failure of Structure	1.9

1.4.11. Masonry Cement.....	1.14	1.9.4.
1.4.12. Trief Cement.....	1.15	1.9.5.
1.4.13. Expansive Cement.....	1.15	1.9.6.
1.4.14. Oil Well Cements.....	1.16	1.9.7.
1.4.15. Hydrophobic Cement.....	1.16	1.9.8.
1.4.16. Waterproof Cement.....	1.17	1.10. Aggr
1.4.17. High Alumina Cement.....	1.17	1.10.1
1.4.18. Sleeper Cement.....	1.18	1.10.2
1.5. Properties of Cement.....	1.19	1.10.3
1.6. Chemical composition of Portland Cement	1.20	1.11. Tests
1.7. Bogue's Compound	1.21	1.11.1
1.8. Hydration of Cement.....	1.22	1.11.2
1.8.1. General.....	1.22	1.11.3
1.8.2. Dormant Period.....	1.23	1.11.4
1.8.3. Reactions during hydration.....	1.23	1.11.5
1.8.4. Reactions involving the aluminates	1.24	1.11.6
1.8.5. Kinetics of cement hydration.....	1.25	1.11.7
1.8.6. Stages In Cement Hydration.....	1.25	1.11.8.
1.8.7. Composition of pore solution	1.27	1.11.9.
1.8.8. Structure of cement hydration products.....	1.28	1.11.10
1.9. Tests on Properties of Cement.....	1.28	1.11.11
1.9.1. General.....	1.28	1.12. Water
1.9.2. Test for Consistency of Standard Cement Paste	1.29	
1.9.3. Test for Determining the Setting Time of Cement	1.30	

PRINCIPAL

1.12. TYPES OF INSPECTION OF CONCRETE STRUCTURE	1.26
1.12.1. Routine inspection.....	1.27
1.12.2. Detailed inspection.....	1.27
1.12.3. Special inspection.....	1.27
1.13. PERIODS OF INSPECTION	1.28
1.13.1. Pre-Monsoon inspection.....	1.28
1.13.2. Post Monsoon inspection.....	1.28
1.14. VARIOUS ASPECTS OF INSPECTION	1.29
1.14.1. Condition of Wall Paint.....	1.29
1.14.2. Conditions of Paint on Wood Work and Grill.....	1.29
1.14.3. Condition on Floor	1.29
1.14.4. Roof Leakage, if Any	1.30
1.14.5. Condition of Service Fittings	1.30
1.14.6. Drainage of Terrace or Pitched Roof	1.30
1.14.7. Growth of Vegetation.....	1.31
1.14.8. Structural Defects.....	1.31
1.15. ASSESSMENT PROCEDURE FOR DAMAGED STRUCTURE	1.31
1.15.1. Pre-Repair Evaluation	1.32
1.15.2. Post Repair Evaluation.....	1.32
1.15.3. Physical inspection of Damaged Structure.....	1.33
1.15.4. Analysis On Physical inspection	1.34
1.16. CAUSES OF DETERIORATION	1.35
1.16.1. Design and Construction Faults	1.35
1.16.2. Environmental Effects.....	1.35
1.16.3. Poor Quality Material Used.....	1.35
1.16.4. Quality of Supervision	1.36

C.4

Contents

1.16.5. Deterioration Due to Corrosion.....	1.36
TWO MARKS QUESTION AND ANSWERS.....	1.37
REVIEW QUESTIONS.....	1.44

UNIT - 2

2.9. PER

SERVICEABILITY AND DURABILITY OF CONCRETE.....	2.1 - 2.90
--	------------

2.1. INTRODUCTION.....	2.1
2.2. QUALITY MANAGEMENT SYSTEM (QMS).....	2.2
2.3. QUALITY ASSURANCE PLAN (QAP).....	2.3
2.3.1. General.....	2.3
2.3.2. Necessity of Quality Assurance.....	2.3
2.3.3. Development and Operation of Quality Assurance System.....	2.3
2.3.4. Components of Quality Assurance System.....	2.4
2.4. QUALITY CONTROL (QC) PROCESS.....	2.6
2.5. QUALITY AUDIT (QA) SYSTEM.....	2.6
2.6. CONCRETE PROPERTIES.....	2.6
2.7. STRENGTH OF CONCRETE.....	2.7
2.7.1. Introduction.....	2.7
2.7.2. Factors Influencing Strength of Concrete.....	2.8
2.7.3. Tests for Strength of Concrete.....	2.19
2.7.4. Destructive Tests.....	2.19
2.7.5. Semi-Destructive Tests.....	2.24
2.7.6. Non Destructive Test.....	2.28
2.8. DURABILITY OF CONCRETE.....	2.39
2.8.1. Definition of Durability.....	2.39

2.10. T

2.11. CI

2.12. CI

2.13. CO

2.14. EI

2.8.2. Significance of Durability	2.39
2.8.3. Impact of Water-Cement Ratio on Durability	2.40
2.9. PERMEABILITY	2.42
2.9.1. General	2.42
2.9.2. Coefficient of Permeability	2.42
2.9.3. Permeability of Cement Paste	2.43
2.9.4. Permeability of Concrete	2.45
2.10. THERMAL PROPERTIES OF CONCRETE	2.48
2.10.1. Introduction	2.48
2.10.2. Thermal Character of Concrete	2.48
2.10.3. Thermal Conductivity of Concrete	2.49
2.10.4. Thermal Expansion of Concrete	2.49
2.10.5. Fire Resistance on Concrete	2.50
2.11. CRACKING OF CONCRETE	2.51
2.11.1. Types of Cracks	2.51
2.11.2. Classification of Cracks	2.51
2.11.3. Settlement Cracks	2.55
2.11.4. Shrinkage of Concrete	2.55
2.11.5. Plastic Shrinkage	2.56
2.11.6. Drying Shrinkage	2.57
2.12. CREEP OF CONCRETE	2.57
2.12.1. Factors Influencing Creep	2.58
2.12.2. Effects of Creep	2.59
2.13. CONCRETE IN SEA WATER	2.60
2.14. EFFECT OF CLIMATE (FREEZING AND THAWING)	2.62

C.6

2.15. EFFECT OF TEMPERATURE	2.63
2.16. EFFECT OF CHEMICAL	2.64
2.17. MECHANISM OF CORROSION OF STEEL.....	2.66
2.17.1. Effect of Corrosion.....	2.68
2.17.2. Exposure Conditions Affecting Durability of Concrete	2.69
2.18. CONCRETE COVER.....	2.71
2.18.1. Effects of Cover Thickness	2.72
2.19. EFFECT OF CRACKING	2.73
2.20. DESIGN AND DETAILING ERRORS.....	2.74
2.20.1. Inadequate Structural Design	2.74
2.20.2. Poor Design Details.....	2.74
2.21. CONSTRUCTION ERRORS IN CONCRETE	2.77
2.21.1. Adding Water to Concrete.....	2.77
2.21.2. Improper Alignment of Formwork.....	2.77
2.21.3. Improper Consolidation or Compaction of Concrete	2.78
2.21.4. Improper Curing.....	2.78
2.21.5. Improper Location of Reinforcing Steel	2.79
2.21.6. Movement of Formwork	2.79
2.21.7. Premature Removal of Shores Or Reshores	2.80
2.21.8. Settling of the Concrete	2.80
2.21.9. Settling of the Subgrade	2.80
2.21.10. Vibration of Freshly Placed Concrete	2.80
2.21.11. Improper Finishing of Flat Concrete Surface.....	2.80
TWO MARKS QUESTION AND ANSWERS	2.82
REVIEW QUESTIONS	2.90

Contents

MATERIALS

3.1. INTRODUCTION

3.2. REQUIREMENTS

3.3. SPECIFICATIONS

3.4. SPECIFICATIONS

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UNIT - 3

MATERIALS FOR REPAIR	3.1 - 3.40
3.1. INTRODUCTION.....	3.1
3.2. REQUIREMENTS OF REPAIR MATERIALS.....	3.1
3.2.1. Low Shrinkage.....	3.2
3.2.2. Setting/Hardening Properties.....	3.2
3.2.3. Workability	3.2
3.2.4. Compatible Coefficient of thermal Expansion	3.2
3.2.5. Compatible Mechanical Properties and Strength	3.3
3.2.6. Alkalinity	3.4
3.2.7. Low Air and Water Permeability.....	3.4
3.2.8. Aesthetics	3.4
3.2.9. Cost.....	3.4
3.2.10. Durability and Bio Non-Degradability.....	3.4
3.3. SPECIAL CONCRETES	3.5
3.3.1. Types of Special Concrete.....	3.5
3.3.2. Light Weight Concrete	3.6
3.3.3. Fiber Reinforced Concrete (Fre).....	3.6
3.3.4. Polymer Concrete Composites	3.11
3.3.5. Sulphur Infiltrated Concrete (Sic)	3.16
3.3.6. Ferro Cement.....	3.18
3.3.7. No-Fines Concrete.....	3.21
3.4. SPECIAL MORTAR.....	3.22
3.4.1. Types of Special Mortars.....	3.23
3.4.2. Expansive Cement.....	3.24

C.8

3.5. CONCRETE CHEMICALS.....	3.25
3.5.1. Selection of Concrete Admixtures.....	3.25
3.5.2. Purposes of Concrete Chemicals.....	3.26
3.5.3. Classification of Concrete Admixtures.....	3.26
3.5.4. Factors Affecting Concrete Admixtures Performance.....	3.30
3.5.5. Adverse Effect of Concrete Admixture.....	3.30
TWO MARKS QUESTIONS AND ANSWERS.....	3.32
REVIEW QUESTIONS.....	3.39

UNIT - 4

TECHNIQUES FOR REPAIR AND DEMOLITION.....	4.1 - 4.89
4.1. INTRODUCTION.....	4.1
4.2. RUST ELIMINATORS.....	4.1
4.2.1. General.....	4.1
4.2.2. Physical Properties of Rust Eliminators.....	4.2
4.2.3. Homemade Rust Eliminators.....	4.2
4.3. REBARS DURING REPAIR.....	4.3
4.3.1. Amoured And Clad Bars.....	4.3
4.3.2. Stainless Steel Rebars.....	4.3
4.3.3. Frp Rebars.....	4.4
4.4. POLYMER RESIN BASED COATINGS.....	4.4
4.5. VACUUM CONCRETE.....	4.6
4.5.1. General....	4.6
4.5.2. Definition.....	4.6
4.5.3. Technique And Equipments.....	4.7

Contents

4.5.	4.5.
4.5.	4.5.
4.5.	4.5.
4.5.	4.5.
4.6. FOAMEI	4.6.
4.6.	4.6.
4.6.	4.6.
4.6.	4.6.
4.6.	4.6.
4.6.	4.6.
4.6.	4.6.
4.7. DRY PA	4.7.
4.8. MORTA	4.8.
4.9. SHOTCR	4.9.
4.9.	4.9.
4.9.	4.9.
4.9.	4.9.
4.9.	4.9.
4.9.	4.9.
4.10. EPOXY	4.10
4.10	4.10

Contents

C.9

4.5.4. Effect of Vacuum Dewatering of Concrete	4.8
4.5.5. Advantages of Vacuum Concreting.....	4.9
4.5.6. Disadvantages of Vacuum Concreting	4.9
4.5.7. Applications of Vacuum Concrete	4.9
4.6. FOAMED CONCRETE	4.10
4.6.1. General.....	4.10
4.6.2. Definition.....	4.11
4.6.3. Types of Foamed Concrete.....	4.12
4.6.4. Production of Foamed Concrete	4.12
4.6.5. Properties of Foamed Concrete	4.14
4.6.6. Advantages of Foamed Concrete	4.15
4.6.7. Disadvantages of Foamed Concrete	4.16
4.6.8. Applications of Foamed Concrete	4.17
4.7. DRY PACK.....	4.17
4.8. MORTAR PACK.....	4.19
4.9. SHOTCRETE/GUNITE	4.20
4.9.1. General	4.20
4.9.2. Types of Shotcrete.....	4.20
4.9.4. Properties of Shotcrete/Gunite	4.23
4.9.5. Applications.....	4.24
4.9.6. Disadvantages.....	4.25
4.9.7. Difference Between Shotcrete And Gunite	4.25
4.10. EPOXY INJECTION FOR REPAIR.....	4.25
4.10.1. General	4.25
4.10.2. Uses of Epoxy Grouts, Mortars And Coatings.....	4.27

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Repair and Rehabilitation of Structures

Contents

C.10	
4.11. MORTAR REPAIR FOR CRACKS	4.27
4.11.1. General	4.27
4.11.2. Polymer Modified Cement Mortar	4.27
4.11.3. High Performance Cement	4.28
4.11.4. Epoxy Resins	4.28
4.12. COMMON TYPES OF REPAIR TECHNIQUES	4.28
4.12.1. Bonding With Epoxies	4.29
4.12.2. Routing And Sealing	4.29
4.12.3. Stitching	4.30
4.12.4. External Stressing	4.32
4.12.5. Blanketing	4.34
4.12.6. Overlays	4.37
4.12.7. Grouting	4.38
4.12.8. Autogenous Healing	4.39
4.13. TECHNIQUES OF REPAIR AND DISINTEGRATION OF CONCRETE	4.39
4.13.1. Jacketing	4.39
4.13.2. Pneumatically Applied Mortar	4.41
4.13.3. Prepacked Concrete	4.41
4.13.4. Replacement of Concrete	4.41
4.13.5. Surface Protection Methods	4.42
4.14. SHORING	4.44
4.14.1. General	4.44
4.14.2. Types of Shoring	4.45
4.15. UNDERPINNING	4.49
4.15.1. Purposes of Underpinning	4.50
4.15.2. Methods in Underpinning	4.50

4.15
4.16. METHOC
4.16
4.16
4.16
4.16
4.17. ENGINE
4.17
4.17
4.17
4.17
4.17
4.17
4.18. DEM
STU
4.18
4.18
4.18
4.18
4.18
4.18
4.18

4.15.3. Precautionary Measures	4.53
4.16. METHODS OF CORROSION PROTECTION	4.53
4.16.1. Protective Coatings for Reinforcement	4.54
4.16.2. Cathodic Protection	4.55
4.16.3. Corrosion Resistant Steel	4.58
4.16.4. Corrosion inhibitors	4.59
4.17. ENGINEERED DEMOLITION TECHNIQUES	4.61
4.17.1. Demolition	4.61
4.17.2. Survey of Building Or Structures	4.61
4.17.3. Demolition Plan	4.61
4.17.4. Principles of Dismantling	4.62
4.17.5. Dismantling Methods	4.62
4.17.6. Factors Affecting The Selection of Demolition Techniques	4.63
4.17.7. Demolition Techniques	4.63
4.18. DEMOLITION OF STRUCTURE USING IMPLOSION TECHNOLOGY: A CASE STUDY	4.73
4.18.1. Introduction	4.73
4.18.2. Options for Demolition (Conventional Methods)	4.74
4.18.3. Demolition By Implosion	4.75
4.18.4. Important Aspect of Implosion Technology	4.76
4.18.5. Drilling of Holes for Placement of Explosive	4.76
4.18.6. Quantity of Explosive	4.76
4.18.7. Type of Explosive & Detonators	4.76
4.18.8. Test Blast	4.77
4.18.9. Wrapping of Holes	4.78
4.18.10. Ballasting	4.78

C.12

4.18.11. Falling of Structure.....	4.79
4.19. PRECAUTIONARY MEASURES.....	4.79
4.20. STRUCTURAL HEALTH MONITORING SYSTEM.....	4.79
TWO MARKS QUESTION AND ANSWERS	4.81
REVIEW QUESTIONS.....	4.89

UNIT - 5

REPAIR, REHABILITATION AND RETROFITTING OF STRUCTURES.....	5.1 - 5.52
--	------------

5.1. INTRODUCTION.....	5.1
5.2. TECHNIQUES TO RESTORE ORIGINAL STRENGTH.....	5.1
5.2.1. Small Cracks.....	5.1
5.2.2. Large Cracks and Crushed Concrete	5.2
5.3. REPAIR METHODOLOGY.....	5.5
5.3.1. General	5.5
5.3.2. Repair Options.....	5.5
5.3.3. Performance Requirements of Repair Systems	5.6
5.3.4. Factors to be Considered for selection of Repair Methods	5.6
5.4. REPAIR STAGES.....	5.6
5.4.1. Concrete Removal and Surface Preparation.....	5.7
5.4.2. Form Work	5.8
5.4.3. Apply Bonding Coat and Repair Application	5.9
5.5. METHODS FOR REPAIR TO OVERCOME DEFECTS IN MEMBER.....	5.10
5.5.1. Repairs using Mortars.....	5.10
5.5.2. Pre-Placed Aggregate Concrete (Pac)	5.10
5.5.3. Concrete Replacement.....	5.12
5.5.4. Epoxy Bonded Concrete.....	5.12

5.5.5.
5.5.6.
5.5.7.
5.5.8.
5.5.9.
5.5.10
5.5.11

5.6. REPAIR/

5.6.1
5.6.2
5.6.3

5.7. REPAIR/

5.7.1
5.7.2

5.8. REPAIR

5.8.1
5.8.2
5.8.3

5.8.4

5.9. REPAIR

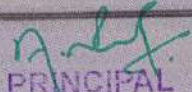
5.9.
5.0.
5.9.

5.10. REPAIR

5.10

PRINCIPAL

5.5.5. Thin Polymer Overlays.....	5.12
5.5.6. Thin Epoxy Overlay	5.13
5.5.7. Protective Seal Coats on the Entire Surface	5.13
5.5.8. Plate Bonding	5.14
5.5.9. Rcc Jacketing.....	5.15
5.5.10. Fiber Wrap Technique.....	5.17
5.5.11. Propping and Supporting.....	5.19
5.6. REPAIR/STRENGTHENING OF STRUCTURAL ELEMENTS.....	5.20
5.6.1. Strengthening of Columns.....	5.21
5.6.2. Strengthening of Beams	5.22
5.6.3. Strengthening of Slabs.....	5.23
5.7. REPAIR/REHABILITATION STRATEGIES	5.24
5.7.1. Stress Reduction.....	5.25
5.7.2. Repairs To Overcome Cracks/Joints	5.25
5.8. REPAIR OF STRUCTURE DAMAGED BY FIRE.....	5.26
5.8.1. Investigation Procedures	5.27
5.8.2. Preliminary Investigation	5.28
5.8.3. Types of Distress	5.30
5.8.4. Estimating The Fire Severity.....	5.30
5.9. REPAIR TO OVERCOME CHEMICAL DISRUPTION.....	5.31
5.9.1. Realkalisation	5.31
5.9.2. Fiber Reinforced Polymers (Frp)	5.32
5.9.3. Case Study On Patch Repair in Rcc Slab	5.33
5.10. REPAIR TO OVERCOME LEAKAGE.....	5.35
5.10.1. Leak-Sealing Techniques	5.36


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 GUNDUR, TIRUCHIRAPPALLI-620 007.

C.14

5.10.2. Conventional Methods	5.3
5.10.3. Injection Sealing.....	5.3
5.10.4. Case Study On Leakages From Terraces	5.3
5.11. REPAIRS TO OVERCOME MARINE EXPOSURE.....	5.3
5.11.1. Seawater Exposure	5.3
5.11.2. Underwater Repairs.....	5.4
5.11.3. Preparation of Damaged Area	5.4
5.11.4. Application of Materials.....	5.4
5.12. REPAIRS TO OVERCOME WEATHERING CORROSION.....	5.4
5.12.1. Chloride Resistance And Steel Corrosion	5.4
5.12.2. Moderate To Severe Exposure Conditions for Concrete.....	5.4
5.13. STUDIES ON REPAIR AND REHABILITATION OF WATER TANKS.....	5.4
5.13.1. General.....	5.4
5.13.2. Critical Observation On Deterioration	5.4
5.13.3. Measures for The Existing Distressed Tanks	5.4
TWO MARKS QUESTIONS AND ANSWERS	5.4
REVIEW QUESTIONS	5.5
ANNA UNIVERSITY QUESTION PAPERS.....	UQ.1 - UQ.6
SOIVED ANNA UNIVERSITY QUESTION PAPERS	SQ.1 - SQ.6

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by Dr. R. SARAVANAN
R. DINESH KUMAR
A. SURIYA

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CONTENTS

UNIT – 1

SOURCES AND TYPES OF MUNICIPAL SOLID WASTES	1.1 – 1.50
1.1. INTRODUCTION	1.1
1.2. SOURCES AND TYPES OF SOLID WASTES	1.2
1.3. CLASSIFICATION OF SOLID WASTES	1.2
1.3.1. Source-based classification	1.4
1.3.2. Type-based classification	1.5
1.4. WASTE GENERATION RATES	1.9
1.4.1. Per Capita Quantity of Municipal Solid Waste in Indian Urban Centers	1.10
1.4.2. Estimation of Future Per Capita Waste Quantity	1.11
1.5. FACTORS AFFECTING GENERATION OF SOLID WASTE	1.11
1.6. WASTE CHARACTERISTICS	1.14
1.6.1. Physical Characteristics	1.14
1.6.2. Chemical Characteristics	1.17
1.6.3. Classification of Chemical Characteristics	1.17
1.7. COLLECTION OF SAMPLES OF SOLID WASTE	1.19
1.7.1. Sampling procedures	1.20
1.8. COMPOSITION OF SOLID WASTES	1.21
1.9. EFFECTS OF IMPROPER DISPOSAL OF SOLID WASTE	1.22
1.9.1. Public health effect	1.22
1.9.2. Environmental effect	1.25
1.10. SOLID WASTE MANAGEMENT (SWM)	1.28
1.11. PRINCIPLES OF MUNICIPAL SOLID WASTE MANAGEMENT	1.29

1.11.1. Waste Reduction	1.30
1.11.2. Effective Management of Solid Waste.....	1.30
1.11.3. Solid Waste Management (SWM) system	1.30
1.12. INTEGRATED WASTE MANAGEMENT (IWM)	1.34
1.12.1. General	1.34
1.12.2. Basics of IWM	1.34
1.12.3. Characteristics of IWM	1.36
1.12.4. Benefits of IWM for developing economies.....	1.38
1.13. MANAGEMENT OF SOLID WASTES	1.39
1.13.1. Municipal Solid Waste (Management And Handling) Rules 2000 And Draft Revised Msw Rules 2013.....	1.39
1.14. ENCOURAGEMENT TO NGO'S / PRIVATE SECTOR	1.40
1.14.1. Voluntary Organizations/NGO involvement	1.40
1.14.2. Encouragement to NGOs and Waste Collector Co-Operatives.....	1.41
1.14.3. Voluntary Organization/ NGO/ Private Sector participation	1.41
1.15. PUBLIC AWARENESS AND TRAINING	1.42
1.15.1. Public Awareness	1.42
1.15.2. Training to Ward Councilors.....	1.42
1.15.3. Mode of Implementing Public Awareness Programs.....	1.42
1.16. FINANCIAL AND ECONOMIC ASPECT	1.42
1.17. LEGAL ASPECTS.....	1.42
1.17.1. Legal framework for Municipal Solid Waste in India	1.43
TWO MARKS QUESTIONS AND ANSWERS	1.45
REVIEW QUESTIONS	1.49

UNIT - 2

ON-SITE STORAGE AND PROCESSING	2.1 - 2.32
---	-------------------

2.1. INTRODUCTION	2.1
--------------------------------	------------

2.2. ON-SITE HANDLING.....	2.1
2.2.1. Importance of On- Site Handling	2.1
2.2.2. Methods of On-Site Handling	2.2
2.3. STORAGE OF WASTES.....	2.2
2.4. ON- SITE STORAGE	2.2
2.5. FACTORS IN ON-SITE STORAGE OF SOLID WASTE.....	2.3
2.6. EFFECTS OF STORAGE ON THE WASTE COMPONENTS.....	2.3
2.6.1. Biological Decomposition.....	2.3
2.6.2. Absorption of Fluids	2.4
2.6.3. Contamination of Waste Components.....	2.4
2.7. STORAGE CONTAINER.....	2.4
2.7.1. Containers/Storage Bins.....	2.5
2.7.2. Communal Containers.....	2.8
2.8. CONTAINER LOCATION.....	2.9
2.8.1. Location of Communal Container.....	2.10
2.9. ON-SITE PROCESSING.....	2.12
2.10. ON-SITE SEGREGATION OF SOLID WASTE.....	2.13
2.11. SOURCE SEPARATION.....	2.14
2.11.1. Drop-off.....	2.14
2.11.2. Buy-Back.....	2.15
2.11.3. Curbside Program.....	2.15
2.12. STORAGE OPTIONS UNDER INDIAN CONDITIONS.....	2.15
2.12.1. No Storage At Source.....	2.15
2.12.2. Measures To Improve the System.....	2.16
2.13. THE PRESENT SCENARIO.....	2.17
2.13.1. Criteria for Placing Large Size Containers At the Waste Storage Depots.....	2.18

2.13.2. Maintenance of Waste Storage Depots/Containers	2.19
2.14. PUBLIC HEALTH AND AESTHETICS	2.19
2.15. CASE STUDY UNDER INDIAN CONDITIONS - WASTE SEGREGATION AND STORAGE	2.20
2.16. 3R CONCEPT (REDUCE, REUSE, AND RECYCLE)	2.22
2.16.1. Waste Management Hierarchy And the 3R Concept	2.23
2.16.2. Reduction (Or) Minimization (Or) Waste Prevention	2.24
2.16.3. Reuse	2.24
2.16.4. Recycling	2.24
2.16.5. Recovery	2.24
2.16.6. Disposal	2.25
2.16.7. Current 3R Practices in India	2.25
2.16.8. 3R in the Municipal Solid Waste (Management & Handling) 2000 Rules	2.25
TWO MARKS QUESTIONS AND ANSWERS	2.29
REVIEW QUESTIONS	2.32

UNIT - 3

COLLECTION AND TRANSFER	3.1 – 3.54
3.1. INTRODUCTION	3.1
3.2. COLLECTION COMPONENTS	3.2
3.2.1. Collection Points	3.2
3.2.2. Collection Frequency	3.2
3.2.3. Storage Containers	3.3
3.2.4. Collection Crew	3.3

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3.2.5. Collection Route.....	3.4
3.2.6. Transfer Station.....	3.4
3.3. COLLECTION SERVICE.....	3.5
3.4. FREQUENCY OF COLLECTION.....	3.7
3.5. COLLECTION OF UNSEPARATED (COMMINGLED) WASTE.....	3.7
3.5.1. From Low-Rise Detached Dwellings.....	3.8
3.5.2. From Low-And Medium-Rise Apartments.....	3.9
3.5.3. From High-Rise Apartments.....	3.9
3.5.4. From Commercial-Industrial Facilities.....	3.9
3.6. TYPES OF COLLECTION SYSTEMS.....	3.10
3.6.1. Mode of Operation.....	3.10
3.6.2. Equipment Used.....	3.11
3.6.3. Type of Waste Collected.....	3.11
3.7. ANALYSIS OF COLLECTION SYSTEM.....	3.12
3.7.1. Pick Up.....	3.13
3.7.2. Haul.....	3.14
3.7.3. At Site.....	3.15
3.7.4. Off- Route.....	3.15
3.8. MATHEMATICAL ANALYSIS.....	3.15
3.8.1. Haul Container System.....	3.16
3.9. COLLECTION VEHICLES.....	3.19
3.9.1. Small-Scale Collection And Muscle-Powered Vehicles.....	3.19
3.9.2. Non-Compactor Trucks.....	3.21
3.9.3. Compactor Truck.....	3.22
3.10. COLLECTION OPERATION.....	3.22
3.10.1. Movement of Collection Crew.....	3.22

3.10.2. Effect of Container Location And Vehicle Stopping	3.24
3.11. MOTION TIME MEASUREMENT (MTM) TECHNIQUE.....	3.25
3.12. DEVELOPING COLLECTION ROUTES.....	3.26
3.12.1. Macro Routing.....	3.26
3.12.2. Micro Routing	3.26
3.12.3. Districting.....	3.27
3.13. TRANSFER STATION.....	3.29
3.13.1. Factors Affecting the Selection of Transfer Station.....	3.30
3.13.2. Types of Transfer Stations	3.30
3.13.3. Designs for Larger Transfer Operations.....	3.31
3.14. CAPACITY OF TRANSFER STATION.....	3.33
3.14.1. General	3.33
3.14.2. Factors Affecting the Capacity of Transfer Station	3.34
3.14.3. formulas in Transfer Station Capacity	3.34
3.15. VIABILITY	3.36
3.15.1. Cost Analysis To Determine Viability of Transfer Station.....	3.37
3.16. WASTE COLLECTION SYSTEM DESIGN.....	3.39
3.16.1. General	3.39
3.16.2. Record Keeping, Control, Inventory And Monitoring.....	3.41
3.17. IMPLEMENTING COLLECTION AND TRANSFER SYSTEM.....	3.44
3.17.1. Finalizing And Implementing the System Management Plan....	3.44
3.17.2. Purchasing And Managing Equipment	3.44
3.17.3. Hiring And Training Personnel	3.45
3.17.4. Providing Public Information.....	3.46
3.17.5. Monitoring System Cost And Performance	3.46
3.18. OPTIONS UNDER INDIAN CONDITIONS	3.48

3.18.1. Door To Door Collection	3.48
3.18.2. Curbside Collection.....	3.48
3.18.3. Block Collection.....	3.48
3.18.4. Community Bins	3.48
TWO MARKS QUESTIONS AND ANSWERS	3.50
REVIEW QUESTIONS	3.53

UNIT - 4

OFF-SITE PROCESSING.....	4.1 – 4.111
4.1. INTRODUCTION.....	4.1
4.2. PURPOSE OF PROCESSING	4.3
4.2.1. Improving Efficiency of SWM System.....	4.3
4.2.2. Recovering Material for Reuse	4.4
4.2.3. Recovering Conversion Products And Energy.....	4.4
4.3. MECHANICAL VOLUME AND SIZE REDUCTION	4.4
4.3.1. Volume Reduction Or Compaction.....	4.4
4.3.2. Equipment Used for Compaction.....	4.5
4.3.3. Compactors.....	4.7
4.3.4. Selection of Compaction Equipment.....	4.8
4.4. SIZE REDUCTION OR SHREDDING.....	4.8
4.5. EQUIPMENT USED FOR SIZE REDUCTION	4.9
4.5.1. Hammer Mill	4.10
4.5.2. Hydropulper	4.11
4.5.3. Selection of Size Reduction Equipment.....	4.12
4.6. CHEMICAL VOLUME REDUCTION	4.13

4.19.5. Flowsheet	4.67
4.19.6. Environmental Control	4.69
4.20. BIOMETHANATION	4.70
4.20.1. General	4.70
4.20.2. Merits of Biomethanation Process	4.71
4.20.3. Applicability of Biomethanation	4.71
4.20.4. General Process Involved in Biomethanation	4.72
4.20.5. Important Operating Parameters for Biomethanation	4.73
4.20.6. Case Study: the Nisarguna Technology Developed By the Babha Atomic Research Centre (BARC)	4.75
4.21. INCINERATION AND ENERGY RECOVERY	4.76
4.21.1. Incineration	4.76
4.21.2. Combustion of Waste Material	4.77
4.21.3. Incineration Objectives	4.78
4.21.4. Planning An Incineration Facility	4.80
4.22. INCINERATION TECHNOLOGIES	4.84
4.22.1. General	4.84
4.22.2. Mass-Burning System	4.84
4.22.3. Refuse Derived Fuel (RDF) System	4.86
4.22.4. Modular Incineration	4.89
4.22.5. Fluidised-Bed Incineration	4.90
4.23. ENERGY RECOVERY	4.91
4.23.1. General	4.91
4.23.2. Air Emission And Its Control	4.95
4.24. ENVIRONMENTAL CONCERNS	4.100
4.24.1. Water Pollution	4.100


PRINCIPAL

4.24.2. Land-Retained Pollution	4.100
4.24.3. Residue Disposal	4.101
4.24.4. Noise Pollution	4.101
4.24.5. Aesthetic Impact	4.102
4.25. INDIAN SCENARIO IN SELECTION OF INCINERATION TECHNOLOGY	4.102
4.26. THERMAL PROCESSING	4.103
4.26.1. General	4.103
4.26.2. Pyrolysis And Gasification Processes	4.104
4.27. COMPARING PYROLYSIS, GASIFICATION AND MASS-BURN INCINERATION	4.105
4.27.1. Advantages	4.105
4.27.2. Disadvantages	4.106
4.27.3. Uncertainties	4.106
TWO MARKS QUESTIONS AND ANSWERS	4.108
REVIEW QUESTIONS	4.110

UNIT - 5

DISPOSAL	5.1 – 5.52
5.1. INTRODUCTION	5.1
5.2. ISSUES TO BE OVERCOME	5.2
5.2.1. Municipal Capacities	5.2
5.2.2. Political Commitment	5.2
5.2.3. Finance and Cost Recovery	5.2
5.2.4. Technical Guidelines	5.2
5.2.5. Institutional Role and Responsibility	5.3
5.2.6. Location	5.3

C.12

5.3. DISPOSAL OPTIONS AND SELECTION CRITERIA.....	5.3
5.3.1. Disposal Options.....	5.3
5.3.2. Selection Criteria.....	5.5
5.4. SANITARY LANDFILL.....	5.7
5.4.1. General.....	5.7
5.4.2. Principle.....	5.8
5.4.3. Design Components in A Landfill.....	5.9
5.4.4. Life Cycle of Landfill.....	5.10
5.5. LANDFILL PROCESSES.....	5.11
5.5.1. Site Selection Process and Considerations.....	5.11
5.5.2. Settling Process.....	5.11
5.5.3. Microbial Degradation Process.....	5.12
5.5.4. Enhancement of Degradation.....	5.13
5.5.5. Landfill Liners (Sealing System).....	5.14
5.6. LANDFILL GAS AND LEACHATE.....	5.15
5.6.1. General.....	5.15
5.6.2. Factors Affecting Production of Leachate and Landfill Gas.....	5.15
5.7. LANDFILL GAS EMISSION.....	5.16
5.7.1. Composition and Properties.....	5.16
5.7.2. Hazards.....	5.17
5.7.3. Migration.....	5.18
5.7.4. Control.....	5.19
5.7.5. Landfill Gas Management.....	5.20
5.8. LEACHATE FORMATION.....	5.22
5.8.1. Composition and Properties.....	5.22
5.8.2. Leachate Migration.....	5.24
5.8.3. Control.....	5.24
5.8.4. Treatment.....	5.25
5.8.5. Leachate Management.....	5.26

C.12

5.3. DISPOSAL OPTIONS AND SELECTION CRITERIA.....	5.3
5.3.1. Disposal Options	5.3
5.3.2. Selection Criteria.....	5.5
5.4. SANITARY LANDFILL.....	5.7
5.4.1. General	5.7
5.4.2. Principle	5.8
5.4.3. Design Components in A Landfill	5.9
5.4.4. Life Cycle of Landfill.....	5.10
5.5. LANDFILL PROCESSES.....	5.11
5.5.1. Site Selection Process and Considerations.....	5.11
5.5.2. Settling Process	5.11
5.5.3. Microbial Degradation Process	5.12
5.5.4. Enhancement of Degradation	5.13
5.5.5. Landfill Liners (Sealing System)	5.14
5.6. LANDFILL GAS AND LEACHATE.....	5.15
5.6.1. General	5.15
5.6.2. Factors Affecting Production of Leachate and Landfill Gas.....	5.15
5.7. LANDFILL GAS EMISSION	5.16
5.7.1. Composition and Properties	5.16
5.7.2. Hazards.....	5.17
5.7.3. Migration.....	5.18
5.7.4. Control.....	5.19
5.7.5. Landfill Gas Management.....	5.20
5.8. LEACHATE FORMATION	5.22
5.8.1. Composition and Properties	5.22
5.8.2. Leachate Migration	5.24
5.8.3. Control.....	5.24
5.8.4. Treatment	5.25
5.8.5. Leachate Management.....	5.26

5.9. ENVIRONMENTAL EFFECTS OF LANDFILL	5.28
5.9.1. Regulations for Landfills	5.29
5.10. LANDFILL OPERATION ISSUES	5.30
5.10.1. General	5.30
5.10.2. Design and Construction	5.31
5.10.3. Operation	5.34
5.10.4. Monitoring	5.38
5.11. BIOREACTOR LANDFILL	5.39
5.11.1. General	5.39
5.11.2. Types of Bioreactor Landfill	5.40
5.11.3. Essential Components of Bioreactor Landfill	5.42
5.11.4. Implementation and Operation of Bioreactor Landfill	5.43
5.11.5. Key Monitoring Parameters	5.45
5.12. REHABILITATION OF LANDFILL SITES	5.46
5.12.1. General	5.46
5.12.2. Preliminary Study and Evaluation	5.47
5.12.3. Performance of Field Work	5.47
5.12.4. Implementation of Measures	5.48
5.12.5. Closure	5.48
5.12.6. Beginning of Landfilling Operations	5.48
TWO MARKS QUESTIONS AND ANSWERS	5.49
REVIEW QUESTIONS	5.51
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by Dr. R. SARAVANAN
Er. R. DINESH KUMAR
Mrs. A. SURIYA

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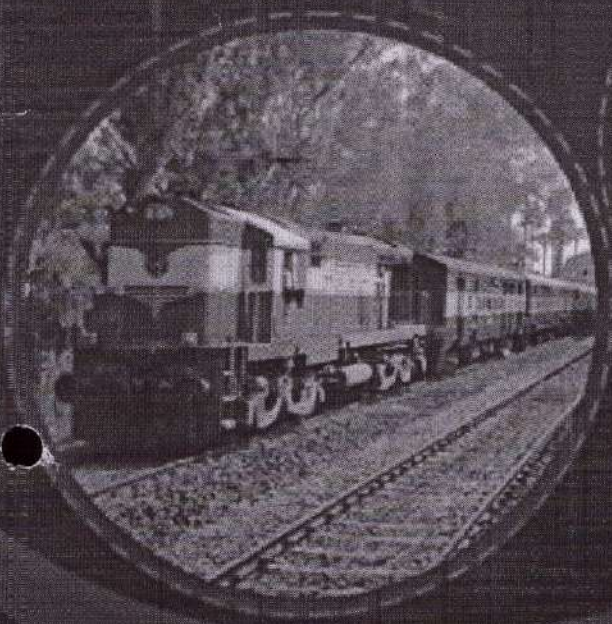
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by Dr. R. SARAVANAN
Er. R. DINESH KUMAR
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CONTENTS

UNIT – 1

RAILWAY PLANNING.....	1.1 – 1.62
1.1. Introduction	1.1
1.2. Modes of Transport	1.2
1.3. Modes of Land Transports	1.3
1.4. Developments in Indian Railways.....	1.4
1.4.1. Role of Indian Railways.....	1.4
1.4.2. Various Gauges on Indian Railways	1.4
1.5. Basic Requirements of An Ideal Alignment.....	1.5
1.6. Selection of Good Alignment	1.5
1.6.1. Obligatory Points.....	1.5
1.6.2. Traffic Considerations.....	1.7
1.6.3. Geometrical Standards	1.7
1.6.4. Topography of the Country	1.7
1.6.5. Economic Considerations.....	1.11
1.6.6. Other Considerations.....	1.11
1.7. Engineering Surveys.....	1.11
1.7.1. Stages of Engineering Surveys.....	1.11
1.7.2. Traffic Survey	1.12
1.7.3. Map Study	1.13
1.7.4. Reconnaissance Survey	1.14
1.7.5. Preliminary Survey.....	1.15
1.7.6. Final Location Survey (or) Detailed Survey	1.16
1.7.7. Modern Surveying Techniques for Difficult Terrain	1.17

PRINCIPAL

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1.8. Railway Track (Permanent Way)	1.19
1.8.1. Components of Permanent Way	1.19
1.8.2. Rails	1.19
1.8.3. Sleepers	1.28
1.8.4. Ballast	1.28
1.8.5. Sub Grade	1.29
1.9. Geometric Design of Track	1.30
1.9.1. Necessity for Geometric Design	1.31
1.9.2. Geometric Design Elements	1.31
1.9.3. Gradients	1.31
1.9.4. Grade Compensation	1.33
1.9.5. Radius and Degree of Curve	1.34
1.9.6. Super Elevation or Cant	1.35
1.9.7. Transition Curves	1.38
1.9.8. Vertical Curves	1.39
1.9.9. Widening of Gauge on Curves	1.40
1.10. Points and Crossings	1.41
1.10.1. Elements of Points and Crossing	1.42
1.10.2. Turnouts	1.43
1.10.3. Track Junctions	1.47
Worked Examples	1.52
Two Marks Questions and Answers	1.57
Review Questions	1.61

UNIT - 2

RAILWAY CONSTRUCTION AND MAINTENANCE	2.1 – 2.64
Introduction	2.1
2.1. Earthwork.....	2.1
2.1.1. Slopes of Sides	2.1
2.1.2. Drains	2.2
2.1.3. Method of Construction	2.2
2.2. Stabilisation of Track on Poor Soil.....	2.3
2.2.1. Layer of moorum.....	2.3
2.2.2. Cement grouting	2.4
2.2.3. Sand piles	2.4
2.2.4. Use of chemicals	2.4
2.3. Tunneling.....	2.5
2.3.1. Tunnelling through rock.....	2.5
2.3.2. Tunnelling through soft ground:.....	2.5
2.3.3. Methods of tunnelling through sub-aqueous strata:	2.5
2.3.4. Drainage of tunnels	2.6
2.3.5. Ventilation of tunnels	2.6
2.3.6. Maintenance of Railway Tunnels.....	2.7
2.4. Requirement of Track Material for Broad Gauge Track.....	2.8
2.4.1. Rails.....	2.8
2.4.2. Number of sleepers.....	2.8
2.4.3. Fittings and fastenings.....	2.8
2.5. Construction of Tracks	2.9
2.5.1. Introduction	2.9

2.5.2. Construction of New Lines	2.9
2.5.3. Land Acquisition	2.9
2.5.4. Earthwork for formation.....	2.10
2.5.5. Plate – Laying.....	2.11
2.5.6. Opening of section to traffic.....	2.13
2.5.7. Doubling of Railway Lines	2.13
2.5.8. Gauge Conversion.....	2.16
2.5.9. Track drainage.....	2.16
2.6. Maintenance of Tracks	2.20
2.6.1. Necessity of Track Maintenance	2.20
2.6.2. Advantages of Track Maintenance.....	2.21
2.6.3. Essentials of Track Maintenance.....	2.21
2.6.4. Reason for Maintenance of Track	2.22
2.6.5. Mechanized Methods of Track Maintenance	2.25
2.6.6. Tier System of Track Maintenance	2.26
2.7. Signaling	2.28
2.7.1. Objective of Signalling.....	2.29
2.7.2. Types of Signals	2.29
2.7.3. Classification According to Function.....	2.29
2.7.4. Classification According to Location.....	2.33
2.7.5. Special Signals	2.34
2.8. Interlocking	2.38
2.8.1. Definition	2.38
2.8.2. Essential Principles of Interlocking.....	2.38
2.8.3. Route Relay System	2.39

2.8.4. Slotting of Signals	2.39
2.8.5. Detectors	2.40
2.8.6. Point Lock and Treadle Bar	2.41
2.8.7. Interlocking of Level-Crossings	2.42
2.8.8. Control of Movements of Trains	2.42
2.9. Stations and Yards	2.46
2.9.1. Station	2.46
2.9.2. Selection of Site for a Railway Station:	2.46
2.9.3. Features of a Railway Station	2.47
2.9.4. Types of Stations	2.48
2.9.5. Platforms	2.51
2.9.6. Yard	2.52
2.9.7. Types of Yards	2.52
2.10. Characteristics of Different Modes of Transport	2.55
2.10.1. Introduction	2.55
2.10.2. Different forms of Rapid Transit Railways	2.56
2.10.2. Surface Railways	2.56
2.10.3. Underground Railways	2.56
2.10.5. Elevated railways	2.57
2.10.6. Tube Railways	2.57
2.10.7. Mass Rapid Transit System (MRTS)	2.58
2.10.8. Mono Rail	2.59
2.10.9. Sky Buses	2.60
Two Marks Questions and Answers	2.61
Review Questions	2.64

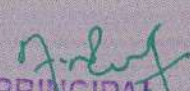
UNIT – 3

AIRPORT PLANNING	3.1 – 3.48
3.1. Introduction	3.1
3.1.1. Development of Air-Transport in India and Trends in Air Traffic ..	3.2
3.2. Air Transport Characteristics	3.2
3.2.1. Definitions of Terms and Standards.....	3.3
3.2.2. Characteristics of Aircraft	3.7
3.2.3. Benefits and Advantages of Air Transport.....	3.7
3.3. Airport Classification	3.8
3.3.1. Development Stages of Airport.....	3.8
3.3.2. International Civil Aviation Organisation (I.C.A.O.)	3.9
3.4. Airport Planning	3.10
3.4.1. Introduction	3.10
3.4.2. Socio-Economic Characteristics of Catchment Areas	3.15
3.4.3. Site Selection for Airports.....	3.16
3.4.4. Factors Influencing Size of an Airport.....	3.16
3.4.5. Design and Drawing of Airport Components	3.17
3.4.6. Cost Estimation	3.18
3.4.7. Economic Evaluation	3.19
3.4.8. Institutional Arrangement	3.19
3.5. Airport Site Selection	3.19
3.5.1. Selection of site for airport.....	3.19
3.5.2. Surveys for Selection of Site	3.23
3.5.3. Regional Plan - ICAO Stipulations	3.28
3.6. Airport Components	3.28

3.6.1. Introduction	3.28
3.6.2. Apron.....	3.29
3.6.3. Terminal Building	3.31
3.6.4. Passenger Facilities and Services	3.32
3.6.5. Hangars.....	3.35
3.6.6. Parking and Circulation Area.....	3.36
3.6.7. Typical Airport Layouts	3.41
3.6.8. Heliports	3.44
Two Marks Questions and Answers.....	3.45
Review Questions	3.47

UNIT – 4

AIRPORT DESIGN	4.1 – 4.52
4.1. Introduction	4.1
4.2. Runway Design.....	4.1
4.2.1. Runway Orientation	4.2
4.2.2. Runway Configurations.....	4.2
4.2.3. Wind Rose Diagram	4.3
4.3. Federal Aviation Administration (FAA)	4.9
4.3.1. Runway Length	4.9
4.4. Corrections To Runway Length	4.12
4.4.1. Correction for Elevation.....	4.12
4.4.2. Correction for Temperature	4.12
4.4.3. Correction for Gradient	4.13
4.5. Geometric Design of Runways	4.13


PRINCIPAL

4.6. Taxiway.....	4.15
4.6.1. Introduction.....	4.15
4.6.2. Factors Controlling Taxiway Layout.....	4.15
4.6.3. Geometric Design Standards.....	4.16
4.7. Airport Obstructions.....	4.19
4.7.1. Imaginary Surfaces.....	4.19
4.7.2. Types of Imaginary Surfaces.....	4.19
4.1.3. Objects With Actual Heights.....	4.22
4.8. Airport Zones.....	4.22
4.8.1. Types of Airport Zones.....	4.22
4.8.2. Zoning Laws.....	4.27
4.9. Visual Aids.....	4.28
4.9.1. Introduction.....	4.28
4.9.2. Indicating Devices.....	4.28
4.10. Airport Lighting.....	4.29
4.10.1. Approach Lighting Systems.....	4.29
4.10.2. Runway Threshold Lighting.....	4.30
4.10.3. Runway Edge Lighting.....	4.30
4.10.4. Runway Centerline and Touchdown Zone Lights.....	4.31
4.10.5. Runway Approach Slope Indicators.....	4.32
4.10.6. Taxiway Edge and Centerline Lighting.....	4.33
4.11. Airport Marking.....	4.35
4.11.1. Runway Marking.....	4.35
4.11.2. Runway Threshold Markings.....	4.36
4.11.3. Touchdown Zone Markings.....	4.37

Contents

4.11.4. Taxiway Centerline and Edge Markings.....	4.39
4.11.5. Taxiway Shoulders.....	4.41
4.11.6. Enhanced Taxiway Markings.....	4.41
Worked Examples	4.42
Two Marks Questions and Answers.....	4.49
Review Questions	4.52

UNIT – 5

HARBOUR ENGINEERING.....	5.1 – 5.109
5.1. Introduction	5.1
5.2. Definitions	5.2
5.2.1. Harbour.....	5.2
5.2.2. Docks.....	5.2
5.2.3. Ports.....	5.3
5.2.4. Tides.....	5.3
5.2.5. Waves.....	5.3
5.3. Natural Phenomena.....	5.3
5.3.1. Winds	5.3
5.3.2. Wave Fundamentals	5.5
5.3.3. Tides and Currents	5.7
5.3.4. Littoral Drift	5.8
5.4. Classification of Harbours	5.9
5.4.1. Classification of Harbour Depending Upon The Protection Needed	5.10

C.10

5.4.2. Classification of Harbour Depending Upon The Utility.....	5.13	Co
5.4.3. Classification of Harbour Based Upon The Location.....	5.15	5.9
5.5. Requirements of a Harbour.....	5.16	5.1
5.6. Features of a Harbour.....	5.16	5.1
5.6.1. Harbour Entrance.....	5.17	
5.6.2. Approach Channel.....	5.17	
5.6.3. Turning Basin.....	5.18	5.1
5.6.4. Sheltered Basin.....	5.18	5.1
5.6.5. Breakwaters.....	5.18	5.1
5.6.6. Wharves and Quays.....	5.18	
5.6.7. Jetties and Piers.....	5.18	
5.6.8. Lock and Locked Basin.....	5.19	5.1
5.6.9. Dry Docks and Slipways.....	5.19	
5.6.10. Ancillaries.....	5.19	
5.7. Site Selection.....	5.19	
5.8. Site Investigations for Harbour.....	5.20	
5.8.1. Surveys.....	5.21	5.16
5.8.2. Meteorological Data.....	5.23	
5.8.3. Oceanographic Data.....	5.24	5.17.
5.8.4. Geological Data.....	5.24	5.18.
5.8.5. Soil Investigation.....	5.25	
5.8.6. Seismic Data.....	5.26	
5.8.7. Model Testing.....	5.26	
5.8.8. Local Resources.....	5.27	5.19.

5.9. Site Analysis for Harbour	5.27
5.10. Harbour Planning	5.28
5.11. Harbour Layout	5.30
5.11.1. Wet Area	5.32
5.11.2. Dry Area	5.32
5.12. Good and Bad Harbours	5.35
5.13. Futuristic Trends and Development of The Harbour	5.35
5.14. Ports	5.36
5.14.1. General	5.36
5.14.2. Requirements of a Good Port	5.37
5.14.3. Facilities at a Major Port	5.38
5.15. Planning and Designing of Ports	5.40
5.15.1. Port Planning	5.40
5.15.2. Port Design	5.41
5.15.3. Other Port Facilities	5.41
5.15.4. Port Development	5.42
5.16. Docking and Repair Facilities	5.43
5.16.1. Harbour Docks	5.43
5.17. Coastal Structures	5.43
5.18. Piers	5.43
5.18.1. General	5.43
5.18.2. Types of Piers	5.44
5.18.3. Additional Points for Piers	5.45
5.19. Breakwaters	5.46

5.19.1. General	5.46
5.19.2. Functions of Breakwaters.....	5.46
5.19.3. Types of Breakwaters.....	5.47
5.19.4. Mound Breakwaters	5.47
5.19.5. Vertical Wall Breakwaters	5.52
5.19.6. Composite Breakwater.....	5.53
5.19.7. Special Type Breakwaters.....	5.54
5.19.8. Real Time Study On Breakwaters.....	5.55
5.20. Wharves	5.56
5.20.1. Gravity Walls	5.57
5.20.2. Slip Circles	5.58
5.20.3. Wall On Wells.....	5.59
5.20.3. Wall of Precast Blocks	5.61
5.20.4. Sheet Pile Walls	5.62
5.21. Jetties	5.65
5.21.1. Jetty Alignment.....	5.65
5.21.2. Differences Between Wharf and Jetty.....	5.66
5.22. Quay.....	5.67
5.22.1. General	5.67
5.22.2. Design of Quay Walls.....	5.67
5.22.3. Types of Quay Walls.....	5.67
5.22.4. Important Details of Quay Walls	5.70
5.23. Fenders.....	5.70
5.23.1. General	5.70

5.23.2. Types of Fenders	5.71
5.23.3. Timber Piles Fenders With Springs	5.71
5.24. Dolphins	5.72
5.24.1. General	5.72
5.24.2. Types of Dolphins	5.72
5.25. Navigational Facilities	5.74
5.25.1. Necessity for Navigational Facilities	5.74
5.25.2. Fixed and Floating Light Stations	5.74
5.25.3. Lighthouse	5.75
5.26. Signals	5.77
5.26.1. General	5.77
5.26.2. Requirements of a Signal	5.77
5.26.3. Types of Signals	5.77
5.27. Moorings	5.83
5.27.1. General	5.83
5.27.2. Mooring Accessories	5.83
5.28. Dredging & Dredgers	5.85
5.28.1. General	5.85
5.28.2. Choice of Dredger	5.85
5.28.3. Types of Dredging Devices	5.86
5.29. Beach Protection	5.89
5.30. Services for Shipping Terminals	5.91
5.30.1. Lighting Facilities	5.91
5.30.2. Electric Power Facilities	5.91

5.30.3. Communication Facilities	5.92
5.30.4. Water Supply	5.92
5.30.5. Fire Protection	5.93
5.30.6. Sewage Disposal	5.93
5.31. Construction Materials	5.94
5.31.1. Timber	5.94
5.31.2. Bricks And Stones	5.94
5.31.3. Structural Steel	5.95
5.31.4. Concrete	5.95
5.32. Inland Waterways	5.97
5.32.1. Inland Water Transportation in Free India	5.98
5.33. Environmental Impact Statements (EIS)	5.99
5.34. Coastal Protection	5.99
5.35. Coastal Regulation Zone (CRZ)	5.100
5.35.1. General	5.100
5.35.2. Guidelines for CRZ	5.100
5.35.3. Prohibited Activities in CRZ	5.101
5.35.4. Permissible Activities in CRZ	5.102
5.35.5. Classifications of Coastal Regulations	5.103
5.35.6. Classifications of Coastal Regulations	5.104
Two Marks Questions and Answers	5.106
Review Questions	5.109
Solved Anna University Question Paper	SQ.1 - SQ.32
University Question Papers	U.Q.1 - U.Q.18



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A Decision Support System for the Condition Assessment of Distressed Concrete Buildings

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Abstract

Concrete is one of the most versatile and durable construction material used worldwide. During its service life, concrete undergoes several deteriorations. The most prominent sign of deterioration is cracking. Cracks in structural concrete are similar to *Hieroglyphics* i.e: pictures which can communicate the damage. Since a considerable expertise is required to understand the pattern of cracking and failure, the tasks of diagnosing concrete deterioration are carried out by professional specialist. It's noteworthy that human expertise in this field is quite limited and expensive, which can lead to the investigation by inexperienced engineers and ultimately expensive misconceptions. Hence, there is a need to develop a user interface using engineering computation to support the visual examiner in decision making. This paper discusses a new support system named as ConASCon-16 developed by the authors for assessing concrete deterioration. The system uses fault trees as its rule. The interface has three modules namely REVIEW, SEEN and HIDDEN. The first module is a database on concrete deterioration, Visual Inspection and Non-Destructive Testing (NDT) with appropriate photos to help the user/engineer understand, the second and third module specifies the cause of visible deteriorations and unseen distresses in concrete and predicts the condition of the structure by a simple questionnaire. A hypothetical case study has been described to demonstrate the applicability of ConASCon-16.

INTRODUCTION

Preserving the integrity of concrete is much important to achieve its desired service life. Many of the older structures were built in the first half of 20th century; they are reaching the end of the expected service life, and therefore are subjected to increasing deterioration. But the worst case is newer structures have also shown signs of early distress (Lorenzi.A, et al. 2009). Demolition of structures which does not get comply with the requirement of current loading levels or which shows signs of distress would be unthinkable both practically and economically. Structures, which suffer total or partial collapse, are easy to identify, however it is difficult to assess the structural state of the standing structures. Hence there is a growing concern regarding how to determine the current state of the structure, in order to ensure its serviceability and safety (Grantham M, 2011).

INFLUENCE OF MINERAL ADMIXTURES ON STRENGTH AND DURABILITY PROPERTIES OF CONCRETE

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Abstract-This paper describes about an experimental investigation was conducted to study the strength and durability properties of concrete with and without mineral admixtures. The conventional concrete has several drawbacks like very low tensile strength, lack of durability, etc. These drawbacks may be overcome by introducing mineral admixtures. The scope of the project is to improve the strength and durability properties of concrete by the way of including mineral admixtures in the concrete at the different level of replacement of cement. About 30% of cement and sand is replaced by the combination of admixtures. For the admixture with higher fineness it is replaced with sand. Super plasticizer is used at 0.2% by weight of cement in order to improve the properties of fresh concrete. Strength and durability characteristics have been carried out for both the control concrete as well as blended concrete.

Keywords - Strength, durability, fly ash, silica fume

I. Introduction

Concrete is an artificial material, which has wider application in construction industry. The basic ingredients of concrete are

- Cement
- Sand
- Coarse aggregate
- Water

Now a days concrete is being used for wide varieties of purpose to make it suitable in different conditions. In these conditions ordinary concrete may fail exhibit the required quality performance or durability. In such cases, admixture is used to modify the properties of concrete so as to make it more suitable for any situation. Since the cost of cement and sand have increased due to increased cost of production and or increased demand, there is an urgent need to replace them partially or wholly by cheaper material.

Admixture is defined as a material, other than cement, water, aggregates, that is used as an ingredient of concrete and is added to the batch immediately before or during mixing. It will be slightly difficult to predict the effect and the results of using admixtures because the change in the brand of cement, aggregate grading, mix proportions and richness of mix alter the properties of concrete. At times, they affect the desirable properties adversely. Sometimes more than one admixture is used in the same mix. Admixtures can be used to improve the concrete properties either in the handling process or consolidation of fresh concrete, in the performance of concrete both in fresh and hardened stages and even for economy in the cost of construction. Almost every property of concrete can be modified to some extent. However the effectiveness of an

admixture in a concrete mix depends on type and amount of cement, temperature of concrete, etc.

A. Role of Admixtures

It has been demonstrated that the best pozzolans in optimum proportion mixed with Portland cement improves many qualities of concrete, such as

- Improvement in workability
- Lower the heat of hydration and thermal shrinkage
- Increase the water tightness
- Reduce the alkali aggregate reaction
- Improve resistance to attack by sulphate soils and sea water
- Reduction in bleeding and segregation
- Increased impermeability
- Increase in setting time
- Improved strength at lower cost
- Decrease in capillary flow of water
- Prevention of shrinkage
- Increase in bond between steel reinforcement and concrete.

The siliceous or aluminous compound in a finely divided form react with the calcium hydroxide to form highly stable cementitious substances of complex composition involving water, calcium and silica. Generally, amorphous silicate reacts much more rapidly than the crystalline form. It is pointed out that calcium hydroxide; otherwise, a water soluble material is converted into soluble cementation material by the reaction of pozzolanic material.

¹Corresponding Author

INFLUENCE OF MINERAL ADMIXTURES ON STRENGTH AND DURABILITY PROPERTIES OF CONCRETE

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Abstract-This paper describes about an experimental investigation was conducted to study the strength and durability properties of concrete with and without mineral admixtures. The conventional concrete has several drawbacks like very low tensile strength, lack of durability, etc. These drawbacks may be overcome by introducing mineral admixtures. The scope of the project is to improve the strength and durability properties of concrete by the way of including mineral admixtures in the concrete at the different level of replacement of cement. About 30% of cement and sand is replaced by the combination of admixtures. For the admixture with higher fineness it is replaced with sand. Super plasticizer is used at 0.2% by weight of cement in order to improve the properties of fresh concrete. Strength and durability characteristics have been carried out for both the control concrete as well as blended concrete.

Keywords - Strength, durability, fly ash, silica fume

1. Introduction

Concrete is an artificial material, which has wider application in construction industry. The basic ingredients of concrete are

- Cement
- Sand
- Coarse aggregate
- Water

Now a days concrete is being used for wide varieties of purpose to make it suitable in different conditions. In these conditions ordinary concrete may fail exhibit the required quality performance or durability. In such cases, admixture is used to modify the properties of concrete so as to make it more suitable for any situation. Since the cost of cement and sand have increased due to increased cost of production and or increased demand, there is an urgent need to replace them partially or wholly by cheaper material.

Admixture is defined as a material, other than cement, water, aggregates, that is used as an ingredient of concrete and is added to the batch immediately before or during mixing. It will be slightly difficult to predict the effect and the results of using admixtures because the change in the brand of cement, aggregate grading, mix proportions and richness of mix alter the properties of concrete. At times, they affect the desirable properties adversely. Sometimes more than one admixture is used in the same mix. Admixtures can be used to improve the concrete properties either in the handling process or consolidation of fresh concrete, in the performance of concrete both in fresh and hardened stages and even for economy in the cost of construction. Almost every property of concrete can be modified to some extent. However the effectiveness of an

admixture in a concrete mix depends on type and amount of cement, temperature of concrete, etc.

A. Role of Admixtures

It has been demonstrated that the best pozzolans in optimum proportion mixed with Portland cement improves many qualities of concrete, such as

- Improvement in workability
- Lower the heat of hydration and thermal shrinkage
- Increase the water tightness
- Reduce the alkali aggregate reaction
- Improve resistance to attack by sulphate soils and sea water
- Reduction in bleeding and segregation
- Increased impermeability
- Increase in setting time
- Improved strength at lower cost
- Decrease in capillary flow of water
- Prevention of shrinkage
- Increase in bond between steel reinforcement and concrete.

The siliceous or aluminous compound in a finely divided form react with the calcium hydroxide to form highly stable cementitious substances of complex composition involving water, calcium and silica. Generally, amorphous silicate reacts much more rapidly than the crystalline form. It is pointed out that calcium hydroxide; otherwise, a water soluble material is converted into soluble cementation material by the reaction of pozzolanic material.

¹Corresponding Author

INFLUENCE OF MINERAL ADMIXTURES ON STRENGTH AND DURABILITY PROPERTIES OF CONCRETE

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EFFECT ON CONCRETE WITH ENGINEERED CEMENTITIOUS COMPOSITE USING POLYPROPYLENE FIBRE.

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Abstract- An Engineered Cementitious composite is a high ductile cementitious composite which possess high crack resistance, tensile strain capacity which surpasses property of normal concrete. Engineered Cementitious Composites are kind of a Fiber Reinforced Concrete, but in ECC the fiber percentage is optimized to get the better performance and absence of coarse aggregates reduces transition zone effect thus altering behaviour of ECC. In this experiment an attempt is made to study the interaction of poly propylene fibers with the matrix prepared by incorporating the mineral admixture Metakaolin. In this experiment flexural tests were carried out to examine the behaviour with different percentage of fibers.

Keywords - ECC, poly propylene fibers, metakaolin, super plasticizers

I. Introduction

Engineered Cementitious Composites (ECC also known as bendable concrete), developed in the last decade, may contribute safer, more durable and sustainable concrete infra-structure that is cost-effective and constructed with conventional construction equipment. With two percentage of short fibers, ecc has been prepared.

ECC is ductile in nature. Under flexure, normal concrete fractures in a brittle manner. In contrast, very high curvature can be achieved for ECC at increasingly higher loads, much like a ductile metal plate yielding. Thus improving tensile strain capacity 3-7% for ECC containing 2% fiber by volume. Micromechanical interaction recounts macroscopic properties of the microstructure of composite and forms spine for ECC material design theory. Especially books for microstructure tailoring of ECC along with material optimization.

II. Objectives

- A. To investigate the properties of ingredients of Engineered Cementitious composites (ECC)
- B. To investigate the Mix Design of ECC
- C. To investigate the hardened properties of the ECC
- D. To check the ductile behavior of the concrete.

III. Ingredients of ECC Concrete

A. Cement

Cement is a binding material that sets and hardens independently, and can bind other materials together. It hardens and attains strength from chemical reaction with the water known as hydration. The grade 43 ordinary Portland cement is used for this research work.

B. Fine Aggregate

Normal dry river sand is used as a fine aggregate, the sand passing through IS 4.75mm sieve with fineness modulus of 2.87 and specific gravity of 2.62 is used as a fine aggregate.

C. Superplasticizer

Super plasticizer used is Melamine Formaldehyde Sulphonate. This is used to control rheological properties of fresh concrete. Super plasticizers are additives to fresh concrete which help in dispersing the cement uniformly in the mix. This is achieved by their deflocculating action on cement agglomerates by which water entrapped in the groups of cement grains is released and it is available for workability. Typically super plasticizer increase slump from say 5cm to about 18-20cm without addition of water. When used to achieve reduction in mixing water they can reduce water up to 15-20% and hence decrease W/C ratio by same amount. This results in increase in strength and other properties like density, water tightness. Where thin sections are to be cast super plasticizer can increase workability to pump able level and almost no compaction is required. This help in avoiding honeycombing. The permeability of concrete is a guide to its durability. Gross porosity is usually due to continuous passage in the concrete due to poor compaction or cracks which can be minimized by the use of super plasticizer, the incorporation of which provides increased workability maintaining low w/c ratio. It is reported that coefficient of permeability of cement paste reduces considerably with the reduction in w/c ratio. Thus super plasticizer can be used effectively to improve the properties of concrete and avoid defect. Melamine based Super plasticizer are used to assess their effectiveness in improving durability. Melamine based super plasticizer are reported to be the best and hence chosen for the research work..

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145

Heuristics For Privacy Preserving Data Mining: An Evaluation

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Abstract— Availability of information in profusion in the internet and databases is common knowledge. It has to be viewed in the backdrop of chances for disclosure of such information by a third party. Privacy Preserving Data Mining (PPDM) is in use for maintaining the privacy of individuals. Numerous updated methods are available for the purpose. Evolutionary Algorithms (EA's) are able to provide effective solutions for real-world optimization problems. They find use in business practice too. This work has a proposal for the implementation of an EA using K-Anonymization; Particle swarm optimization (PSO), Ant colony optimization (ACO) and a Genetic Algorithm (GA). We herein propose Genetic algorithm and particle swarm optimization work with the same data. The use of generalization of the original dataset is meant for achieving K-anonymity. A collection of people called "chromosomes" frame the populace which shows an aggregate solution for a characterized issue in the proposed GA. The achievement of good accuracy is obtained by GA optimization, recall and precision in comparison with K-Anonymization, PSO and ACO methods.

Keywords: Data Mining, Privacy Preserving Data Mining (PPDM), K Anonymization, Particle Swarm Optimization (PSO), Ant Colony Optimization (ACO), Genetic Algorithm (GA)

I. INTRODUCTION

Advancements in hardware and software have brought in the advantage of increased storage capability. Information on personal data regarding individuals available in the internet and databases has been proliferating. Data mining is an easy fits but it is also a threat to privacy of data. Here comes PPDM which

is broad use in keeping up the protection of the fundamental information. The development of PPDM guarantees the private information mined is not noticeable to the client running the calculation. PPDM has sympathy toward the delicate crude information namely names, addresses that are get altered from the master database, leading to the inability for the user of data to compromise another person's privacy. There is also the imperative need for exclusion of sensitive knowledge obtained from mining that can compromise data privacy. Hence, there is need to integrate privacy preservation at two levels, viz, user's personal information and information pertaining to the collective activity. The former goes by the name individual privacy preservation and the latter by collective privacy preservation [1].

Privacy preserving of data has to offer safeguard divulging sensitive data during publication of individual data. Many

techniques are available for modifying or transforming data with a view to maintain privacy. Anonymization of data is required for obtaining data misuse. Many data mining techniques go through modification to ensure privacy. Cryptography, data mining and information hiding [2] form the basis for PPDM. As a general practice statistics based and crypto based approaches are in the use of tackling PPDM. In the former case, data owners sanitize the data through perturbation or generalization as also through use of knowledge models like decision trees. The latter has the specific advantage of the capability to handle huge volume of datasets [3]. In the crypto-based PPDM approach, information proprietors need to execute exceptionally composed data mining algorithm [4] on a collaborative basis despite the achievement of undeniable security assurance and improved data mining execution, these calculations face execution and versatility issues [5].

Privacy preserving data for a single database has the subject matter of extensive study in recent years [6]. Data anonymization transforms a dataset to help upholding of privacy though use of different approaches, for example K-Anonymity via generalization or suppression methods. This helps masking of individually identifiable information. Anonymity transforms data to classes of corresponding equivalent level, with each class having a set of K-records that can help distinguishing each other [7]. Whatever problems we seen in this approach have been solved through use of techniques like l-diversity and t-closeness. Generalization is the commonly known techniques of k-anonymity. Here some of the values are swapped with less specific information while maintaining the meaning of the content intact. There is suppression of the values otherwise. NP-hard [8] denotes the difficulty involved in finding out optimal K-anonymous datasets. It is possible to minimize data loss through optimization of an aggregated value in all features and records.

An Evolutionary Algorithm (EA) is basically one that has been inspired by the principles of natural selection and natural genetics. It is a concept known for its simplicity. Continuous evolution of individual, getting adapted to environment is a fact. Each individual in EA relates to a candidate solution for the target problem, which can be represented as a very simple environment. Evaluation of each individual obtained with the help of fitness function that proves the quality of the candidate solution characterized by the individual. The best individuals (candidate solutions) for each generation (iteration) are deemed to have a higher probability of getting selected for the next


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in the International Conference on "Scientific Research of Engineering and Technology (ICSRET 2017)" held at
Ranganathan Engineering College Coimbatore during 17th, 18th March 2017.

Mr. G. SUDHAKAR
Coordinator

Dr. R. RANGANATHAN
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198

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a paper on FAST AND EFFICIENT DATA STORAGE ON CLOUD USING HYBRID in the National
Conference on "Research Trends in Communication and Information Technologies"
(NCRTCIT-17) held at SSMIET during March 3rd, 2017.

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Performance Characteristics of Hybrid Fibre Concrete Using Waste Materials

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Abstract:

The concrete characterized for its high strength and durability. But it is well known for its brittle and tensile nature which makes complete loss of loading capacity, once failure is initiated. To overcome this weakness in concrete, the fibre is added in which it act as a bridge between the cracks and delay the time of failure and it also reduce the micro cracks. The two fibre combinations which increase the properties of concrete compared to mono fibre concrete in which one fibre is stronger, stiffer and provides strength, while the other is more ductile provides toughness at high strains. The fibres are waste materials which are easily available and cheap may be used for manufacture of structural units and now there is serious problem with the disposal of waste tyre tube, Polyethylene Terephthalate (PET) bottles and other wastes. The wastes are hard to biodegrade and involve processes either to recycle or reuse. The construction industry is in requiring of finding cost effective materials for increasing the strength of concrete structures and which is the alternative way to disposal of waste. In the present investigations to study the influence of addition of waste tyre tube fibre and PET bottle fibre in concrete. The fibres are added as 0.5%, 1%, 1.5% and 2% to weight of the cement in concrete and hybrid combination is studied for various percentages is studied.

Keywords: Strength, Two fibre, Waste tyre tube, Polyethylene Terephthalate


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Assessment of Damage in Concrete Beam using Fuzzy Inference

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Repair and maintenance of existing concrete structures have become one of the most important in the field of civil engineering. Considerable experiential knowledge is required to diagnose the condition of the member and to recommend a proper repair and retrofitting procedure. Hence, there is a need for engineering computations for a proper damage assessment. This paper researches on fuzzy inference i.e., if-then rule-based program for assessment of reinforced concrete beams by considering certain parameters. This program is named as FuzDam in this paper, and it is developed using Visual Basic.

Keywords: Concrete structures, Diagnose, Damage Assessment, Fuzzy Inference.

1. Introduction

Concrete is one of the most durable construction material used worldwide. But it contracts and expands with changes in moisture and temperature; deflects depending on load and support conditions. Cracks and failures occur in the concrete member when appropriate provision is not made to accommodate these movements in design and construction. Technology advancement and increased expectation of the user have led to an issue: whether to retrofit/refurbish the damaged structure or to demolish and rebuild. Demolishing and rebuilding has its practical problems like decanting, access during construction and recycling of waste materials. It is noteworthy that the cost of refurbishment in many cases is less than half of the rebuilding cost^[1].

Damage Assessment can be done by visual or localized experimental methods, which require known vicinity of deterioration and ready accessibility. Usually, visual inspection is followed by an oral assessment that describes the condition of the structure and noticeable failure^[7]. The globalized method of assessment is formulated based on response parameters of the structure. An important contribution in this field has been made by Park and Ang^[2], Banon et



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in recognition of his/her presentation on DISCOVERING CONTENT

SIMILARITY ON-DEMAND DATA ACCESS IN IaaS CLOUD.

in the "3rd National Level Conference on Ubiquitous Technologies in Electronics"
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Secure Transmission Against Provenance Forgery And Packet Drop Attacks In Wireless Sensor Networks

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Abstract— Data are flowed from various sources through transitional processing nodes that aggregate information and cruel opposition may introduce extra nodes in the network or compromise existing ones, assuring high data trustworthiness is crucial for correct decision-making. Data provenance (origin) represents a key factor in evaluating the trustworthiness of sensor data. A lightweight scheme has been proposed, to securely transmit provenance for sensor data, that technique relies on in-packet Bloom filters to encode provenance. An competent mechanism has been introduced for provenance verification and reform at the base station. The secure provenance scheme can be extended with functionality to detect packet drop attacks dramatic by cruel data forwarding nodes. The proposed technique has been evaluated to prove the effectiveness and efficiency of the trivial secure provenance scheme in detecting packet forgery and loss attacks in wireless network environments.

Key words—Provenance, Security, Bloom Filter, Packet Drop.

I. INTRODUCTION

Sensor networks are used in application domains such as cyber physical communications, ecological checking, whether monitoring power grids, etc. The data that should be large sensor node sources and processed in-network with their way to a Base Station (BS) that performs which decision should be taking. Information is considered in the decision process or making. Data provenance is an effective method to assess data trustworthiness, and the actions performed on the data. Provenance in sensor networks has not been present properly addressed. Investigate the problem of secure and efficient provenance transmission and handling for sensor networks, and we use origin to detect packet failure attacks dramatic by cruel sensor nodes. In a multi-hop sensor network, data origin allows the BS to trace the source and forwarding path of an individual data packet. Origin must be witnessed for each

packet, but important tests arise due to the tight storage, energy and bandwidth of sensor nodes. More sensors often operate in an untrusted environment, it may be subject to show aggressions. To address the security such as confidentiality, integrity and freshness of provenance. Propose a provenance encoding strategy for each node on the data packet securely embeds provenance data with a Bloom filter (BF) that is transmitted along with the data. Upon on receiving the packet, the BS extracts and prove the provenance information. To extend the provenance encoding scheme allows the BS to detect packet drop attacks during the sensor node transmission. In the existing research that employs separate transmission channels for data provenance, it only requires a single channel for both. Usual origin security solutions use seriously cryptography and digital signatures and they employ appended based data structures to store provenance, leading to prohibit costs. Use message authentication code (MAC) schemes and Bloom filter, which are fixed-size data structures that compactly represent provenance.

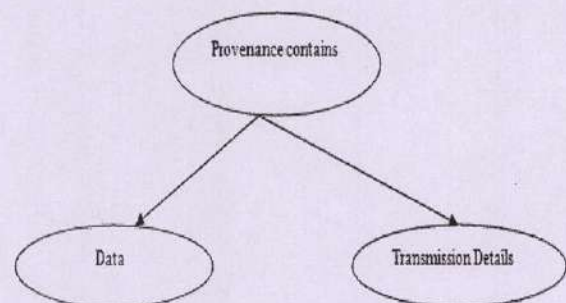


Fig. 1. Provenance



Improving Selfish Node Detection In MANET Using A Collaborative Watchdog

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Abstract—Mobile ad-hoc networks (MANETs) assume that mobile nodes voluntarily cooperate in order to work properly. This cooperation is a cost-intensive activity and some nodes can refuse to cooperate, leading to a selfish node behaviour. Thus, the overall network performance could be seriously affected. The use of watchdog is a well-known mechanism to detect selfish nodes. However, the detection process performed by watchdogs can fail, generating false positives and false negatives that can induce to wrong operations. Moreover, relying on local watchdogs alone can lead to poor performance when detecting selfish nodes, in terms of precision and speed. This is especially important on networks with sporadic contacts, such as delay tolerant networks (DTNs), where sometimes watchdogs have lack of enough time or information to detect the selfish nodes. Thus, proposing collaborative contact-based watchdog (CoCoWa) as a collaborative approach based on the diffusion of local selfish nodes awareness when a contact occurs, so that information about selfish nodes is quickly propagated. This collaborative approach reduces the time and increases the precision when detecting selfish nodes.

Key words—Selfish nodes, MANETs, CoCoWa, Watchdog

I. INTRODUCTION

A set of autonomous wireless mobile nodes constructing a temporary network without the aid of a centralized infrastructure called MANET. Which communicate through multiple hops. The nature of MANET makes cooperation among the nodes essential for the system to be operational. Due to this fact, some nodes are not willing to forward packets to other misbehaving nodes. MANET is composed of mobile nodes without any pre-existent infrastructure and can be installed without any base station and dedicated routers. In MANETs, nodes act as both routers and end users. There are two types of MANETs: open and closed. In a closed MANET, all nodes will have a common goal and work towards that goal. In an open MANET, different nodes have different objectives. Data transmission is the most expensive function in the MANET compared to other functions. Misbehaving nodes

are identified on the basis of packet dropped during the transmission of the next hop. When a node forwards packets, proper transmission of packets by the next node is verified by watchdog. Misbehaviour is noticed, if that node refuses to transmit the packets. The misbehaving nodes can be identified in the level of connection as well as in forwarding level, which are advantages of watchdog. The watchdog drawbacks are, False misbehaving, Minor dropping, Limited transmission power, Collision. There are two main strategies which help to deal with selfish behaviour: a) motivation or incentive based approaches, and b) detection and exclusion.

A wireless sensor network is an ad-hoc network which consists of large number of small inexpensive devices which are known as nodes. WSN consists of base station along with number of nodes that sense the environment and send data to the base station. The base station is more powerful than other nodes in terms of energy consumption and other parameters and serves as an interface to the outer world. When any node needs to send a message to the base station that is outside of its radio range, it sends it through internal nodes.

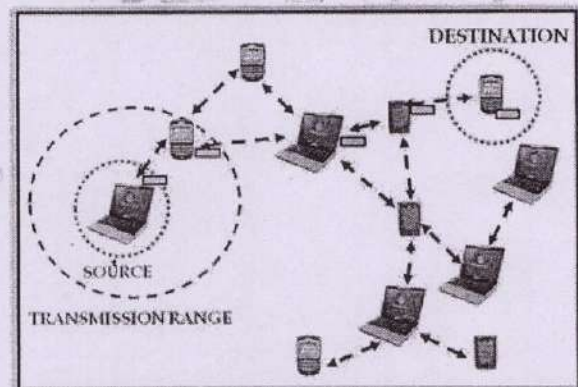


Fig. 1. MANET Architecture

A New Variable Frequency Inverted Sine Carrier PWM Modulated Semi-Cross Switched Multilevel Inverter Topologies

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Abstract— To take out a variable frequency variable amplitude output voltage a new single-phase H-bridge multilevel inverter (MLI) topology is constructed through VFISCPWM modulated semi-cross switched voltage sources along with a hybrid pulse width modulation (PWM) strategy. The principle avoids a shrewd attitude to employ PWM approach only for a meticulous H bridge that serves to produce the desired level while the remaining add-on modules function with the theory of basic switching. The use of reduced number of switching devices involves for a precise number of output voltage levels in comparison with conservative MLIs. The design of the hybrid PWM appropriate to power the suitable switches add strength to its formulation in the sense it requires only either addition or subtraction to generate the square wave modulated pulses for the power devices in the other units other than that responsible for offering the preferred level of output voltage. Simulation results are obtained from MATLAB Simulink environment and validated predict the emergence of a novel variety of MLIs and falsify a diverse dimension for inverter interfaces in power control applications.

Keywords—Bidirectional Switch; Cross switch; Lagrange Multiplier; Multi Level Inverter.

I. INTRODUCTION

Multilevel inverters (MLIs) Endeavour to create high-superiority output voltage with minimum filter requirements over the conformist two-level inverters, to make them suitable for high power and high voltage industrial applications. Pulse-width modulated (PWM) MLIs are deemed to be an essential substitute for the conventional two-level inverters as they are competent of operating with nearly sinusoidal current waveforms and advanced stepped output voltages [1–3]. The MLIs claim an unique range of use in medium voltage drive applications to determine its place over customary inverters [4–6]. The cascaded H-bridge (CHB) MLI uses a string of H-bridge inverters in every phase leg. Each inverter comprises a three-phase uncontrolled six-pulse rectifier at the input side with a capacitive filter. It induces current harmonics at the input of every inverter cell. These harmonics are decreased by introducing phase-shifted secondary in the input transformer, resulting in a more confused construction and higher cost.

Years later, hybrid topologies in which each inverter phase leg is structured by cascading diode clamped or flying capacitor inverter and CHB MLI to produce any number of voltage levels are developed [7–9]. The drawback of hybrid structure is the presence of non-isolated dc sourced H-bridge topologies that synthesis disturbed voltage levels in their respective output stages.

Even though MLI presents quite a few separate advantages, its application is limited due to power rating constraints. In this view, an effort is made by paralleling two diode-clamped inverters throughout an inter-phase reactor in order to overcome power rating constraints [10]. Numerous efforts are being carried out to augment the number of voltage levels with decreased number of switching devices and one such topology is the new single-phase MLI topology [11] in which the number of voltage levels is increased by using a split-wound coupled inductor inside in each inverter leg. The main advantage of this topology is to provide low value of high-frequency current ripple in the load circuit and reduced shoot-through fault against dc-rails. A new balanced cascaded MLI is devised [12] in which cascade connection of sub-cells is attained using two dc sources and four switches through an H-bridge inverter. Regardless of the fact that this topology enjoys high modularity and the ability to increase the number of voltage levels with decreased total harmonic distortion, it undergoes from the drawback that the devices in the H-bridge need to withstand high blocking voltages.

An isolated cascaded MLI, employing low-frequency three-phase transformers and a single dc input power source and avails the use of lower number of power devices, has been recommended in [13–15]. The higher execution cost has been related to the fact that the number of low-frequency transformers increases with concurrent increase in the number of voltage levels. A dual structure-based MLI that consists of an H-bridge inverter to switch the dc voltages sources in series and parallel and another H-bridge inverter module for increasing the voltage level has been presented in [16, 17]. A balanced cascade MLI composed of series connection of quite a few sub-MLI units has been shown to proffer similar number

202

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To my Dean Alhaj. Dr. J. MOHAMED JAHABAR, my Principal Dr. J. ABBAS MOHAIDEEN professor for persevering with me as my advisor throughout the time it took me to complete this book.

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I am grateful too for the support and advice from my faculty colleagues in department of EEE, Mohamed sathak engineering college, kilakarai.

Syllabus

GE6252 BASIC ELECTRICAL AND ELECTRONICS ENGINEERING

UNIT I ELECTRICAL CIRCUITS & MEASUREMENTS

Ohm's Law – Kirchhoff's Laws – Steady State Solution of DC Circuits – Introduction to AC Circuits – Waveforms and RMS Value – Power and Power factor – Single Phase and Three Phase Balanced Circuits. Operating Principles of Moving Coil and Moving Iron Instruments (Ammeters and Voltmeters), Dynamometer type Watt meters and Energy meters.

UNIT II ELECTRICAL MECHANICS

Construction, Principle of Operation, Basic Equations and Applications of DC Generators, DC Motors, Single Phase Transformer, single phase induction Motor.

UNIT III SEMICONDUCTOR DEVICES AND APPLICATIONS

Characteristics of PN Junction Diode – Zener Effect – Zener Diode and its Characteristics – Half wave and Full wave Rectifiers – Voltage Regulation. Bipolar Junction Transistor – CB, CE, CC Configurations and Characteristics – Elementary Treatment of Small Signal Amplifier.

Diagrams

UNIT IV DIGITAL ELECTRONICS

Binary Number System – Logic Gates – Boolean Algebra – Half and Full Adders Flip-Flops – Registers and Counters – A/D and D/A Conversion (single concepts)

K Map

UNIT V FUNDAMENTALS OF COMMUNICATION ENGINEERING

Types of Signals: Analog and Digital Signals – Modulation and Demodulation Principles of Amplitude and Frequency Modulations. Communication Systems: Radio, Fax, Microwave, Satellite and Optical Fibre (Block Diagram Approach only).

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2. Digital Principles & System Design	4. Digital Principles & System Design	6. Digital Principles & System Design	8. Digital Principles & System Design

IV SEMESTER

9. Microprocessor & Microcontroller	11. Microprocessor & Microcontroller	13. Microprocessor & Microcontroller	15. Microprocessor & Microcontroller
10. Design & Analysis of Algorithms	12. Design & Analysis of Algorithms	14. Design & Analysis of Algorithms	16. Design & Analysis of Algorithms
11. Operating System	13. Operating System	15. Operating System	17. Operating System
12. Computer Networks	14. Computer Networks	16. Computer Networks	18. Computer Networks
13. Software Engineering	15. Software Engineering	17. Software Engineering	19. Software Engineering

VI SEMESTER

23. Artificial Intelligence	21. Artificial Intelligence	25. Artificial Intelligence	27. Artificial Intelligence
24. Compiler Design	22. Compiler Design	26. Compiler Design	28. Compiler Design
25. Mobile Computing	23. Mobile Computing	27. Mobile Computing	29. Mobile Computing
26. Distributed Systems	24. Distributed Systems	28. Distributed Systems	30. Distributed Systems
27. Digital Signal Processing	25. Digital Signal Processing	29. Digital Signal Processing	31. Digital Signal Processing
ELECTIVES	ELECTIVES	ELECTIVES	ELECTIVES
28. Data Mining & Data Warehousing	26. Data Mining & Data Warehousing	30. Data Mining & Data Warehousing	32. Data Mining & Data Warehousing
29. Software Testing	27. Software Testing	31. Software Testing	33. Software Testing
30. C# & Net Programming	28. C# & Net Programming	32. C# & Net Programming	34. C# & Net Programming

VIII SEMESTER

42. Multi-Core Architectures and Programming	40. Multi-Core Architectures and Programming	44. Multi-Core Architectures and Programming	46. Multi-Core Architectures and Programming
ELECTIVES	ELECTIVES	ELECTIVES	ELECTIVES
50. Human Computer Interaction	48. Human Computer Interaction	52. Human Computer Interaction	54. Human Computer Interaction
51. Neural Network Analysis	49. Neural Network Analysis	53. Neural Network Analysis	55. Neural Network Analysis
52. Knowledge Representation	50. Knowledge Representation	54. Knowledge Representation	56. Knowledge Representation
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CONTENTS

UNIT -1: BASIC CIRCUITS ANALYSIS

1.1	Introduction.....	1.1
1.2	Ohm's Law.....	1.13
1.3	Resistors in series.....	1.14
1.4	Voltage Division Rule.....	1.15
1.5	Resistors in Parallel.....	1.16
1.6	Current Division Rule.....	1.17
1.7	Source Transformation.....	1.18
1.8	Star Delta Transformation.....	1.18
1.9	Kirchhoff's Laws.....	1.22
1.9.1	Kirchhoff's Current Law.....	1.22
1.9.2	Kirchhoff's Voltage Law.....	1.23
1.10	Maxwell's Mesh Method.....	1.2
1.11	Nodal Method.....	1.2
1.12	Fundamentals of AC Circuit.....	1.1
1.12.1	RL Series Circuit.....	1
1.12.2	RC Series Circuit.....	
1.12.3	RLC Series Circuit.....	
1.12.4	Parallel Circuit.....	
1.13	Phasor Diagram.....	
1.14	Solved Problems, Exercises and Two Marks Questions with Answers	

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Input Current Ripple Reduction Based Boost Converter Through T-Filter Network

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Abstract—This project presents a boost converter with an input current ripple reduction using T-filter network. A boost converter with a tapped inductor can be easily realized by adding an extra tap in the main inductor of the conventional boost converter. A small capacitor is enough to reduce the current ripple instead of a conventional LC filter. The simulation shows that the proposed converters can achieve input current ripple reduction with better efficiency than the existing system.

Index Terms—T-filter network, boost converter, ripple reduction.

I. INTRODUCTION

In many applications, switched mode supplies can be used for many purposes including DC to DC converters. Often, although a DC supply, such as a battery may be available, its available voltage is not suitable for the system being supplied. The input current for a boost power stage is continuous, or non-pulsating, because the output diode conducts only during a portion of the switching cycle. The output capacitor supplies the entire load current for the rest of the switching cycle. By selecting proper parameters rating of ripple reduction branch without increasing the size and weight of the converter. A well-designed input filter is able to reduce the input current ripple, but the size and weight of the filter are quite unacceptable particularly in high-power applications.

Current ripple reduction technique for dc-dc converters using coupled inductor has been a hotspot, and many different types of have been proposed. The multitapped inductor and the seven order transfer function of this topology cause it difficult to build and control. Tapped inductor for switched-mode dc-dc converter aimed to increase the step-up or step-down ratio of the boost/buck converters. MOSFET devices are not bi-directional, nor are they reverse voltage blocking. MOSFET operate as majority carrier device and input impedance of it is higher than that of junction type FETs.

However, the input current ripples of these converters still deteriorate the quality of input power supply particularly in the large current applications. A new boost-derived topology, inductor boost with a capacitor, was proposed. It shows that the proposed tapped inductor boost converter with a capacitor has several advantages over the CBC. The ripple reduction branch minimizes the input current ripple of the boost

converter without introducing extra EMI problem and deteriorating the reverse-recovery problem of the output diodes by adding an extra capacitor.

II. FILTERS

A filter circuit consists of passive circuit elements like inductors, capacitor, resistors and their combination. It is a device to remove the A.C components of the rectified output, but allows the D.C components to reach the load. A filter circuit is in general a combination of inductor (L) and Capacitor (C) called LC filter circuit. So a suitable L and C network can effectively filter out the A.C component from rectified wave. There are two main types of filters are

- Passive filters
- Active filters.

Passive implementations of linear filters are based on combinations of resistors (R), inductors (L) and capacitors (C) and they do not depend upon an external power supply and/or they do not contain active components such as transistors. Inductors block high-frequency signals and conduct low-frequency signals, while capacitors do the reverse. A filter in which the signal passes through an inductor, or in which a capacitor provides a path to ground, presents less attenuation to low-frequency signals than high-frequency signals and is therefore a low-pass filter. Resistors on their own have no frequency-selective properties, but are added to inductors and capacitors to determine the time-constants of the circuit, and therefore the frequencies to which it responds. The types of passive filter are,

- Inductor Filter
- Capacitor Filter
- LC Filter
- π / T-Filter.

Active filters are implemented using a combination of passive and active (amplifying) components, and require an outside power source. Ripple factor may be defined as the ratio of the root mean square value of the ripple voltage to the absolute value of the dc component of the output voltage, usually expressed as a percentage. However, ripple voltage is also commonly expressed as the peak-to-peak value. Operational amplifiers are frequently used in active filter



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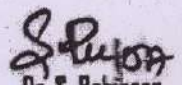
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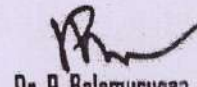
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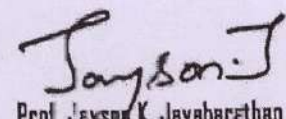
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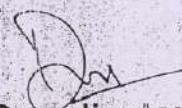
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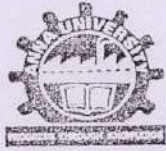
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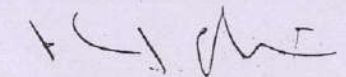


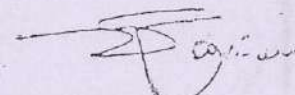
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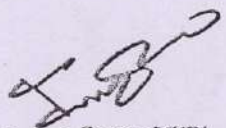
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610

A New Multi Level DC Link Inverter Topology with Variable Frequency Inverted Sine Carrier PWM under Equal Switching Transition

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Abstract—This paper presents with a novel course group of multilevel topology to trim down the number of switches, clamping diodes and dearth of capacitors based on DC link. A new variable inverted sine carrier PWM is used as a switching technique with equal switching transition. A multilevel voltage source inverter can be shaped by connecting a Multi Level DC Link (MLDCL) with a single-phase bridge inverter. The MLDCL provides a dc voltage with the shape of staircase reminiscent of the rectified form of a commanded sinusoidal wave, with or without pulse width modulation to the bridge inverter, which in turn alternates the polarity to generate an ac voltage. Compared with the cascaded H-bridge, diode-clamped, flying-capacitor multilevel inverters, the MLDCL inverters can appreciably trim down the switch count as well as the number of gate drivers as the number of voltage levels increases. A new variable frequency inverted sine carrier pulse width modulation (VFISCPWM) with equal switching transition is used to control this proposed topology. Simulation results are obtained and compare with multi carrier phase disposition pulse width modulation (MCPDFWM) to validate the proposed inverter.

Index Terms—Multi Level Inverter, PWM, THD, Equal Switching Transition, Voltage Level

I. INTRODUCTION

Multilevel inverter is an effective and practical solution for increasing power demand and reducing harmonics of AC waveforms. Function of a multilevel inverter is to synthesize a desired voltage wave shape from several levels of DC voltages. The principal function of multilevel inverters is to synthesize a desired ac voltage from several separate dc sources, which may be obtained from batteries, fuel cells, or solar cells. The desired output voltage waveform can be synthesized from the multiple voltage levels with less distortion, less switching frequency, higher efficiency, and lower voltage devices [1]-[5]. Multilevel voltage-source inverters based on the diode-clamped phase legs, flying-capacitor phase legs, or cascaded H-bridges were proposed for replacing the two-level inverters with series connection of switches or transformer-coupled multiple two-level inverters in medium and high-voltage level applications such as motor drives and static var compensators [6]-[7]. The

multilevel structures can ensure even voltage sharing, both statically and dynamically, among the active switches while it is difficult for a two-level inverter with a series connection of switches to do so. Substantial reduction in size and volume is possible due to the elimination of the bulky coupling transformers or inductors. Multilevel inverters can offer better voltage waveforms with less harmonic content and, thus, can significantly reduce the size and weight of passive filter components.

The last feature was further explored in multilevel inverters using insulated gate bipolar transistors (IGBTs) for replacing gate-turn-off-thyristor (GTO)-based two-level inverters because IGBTs can switch faster and have less demanding gate drive requirements than GTOs. On the other end of the power spectrum, because of their low cost resulting from widespread use in the automotive and power supply industries, low on-resistance, and fast switching capability, low-voltage MOSFETs are utilized in multilevel inverters to reduce the inverter cost or to provide a high bandwidth sinusoidal output voltage at high efficiency that it is unable to achieve with linear amplifiers [8]-[10]. Despite the superior voltage waveform quality provided by higher level inverters, the neutral point-clamped inverter in [11] perhaps the most widely used multilevel structure because of its relatively small number of switches. The high switch count and the difficulty in balancing the voltage of the capacitors in the diode-clamped configuration have prevented the wide acceptance of the higher level inverters in practical applications. As the number of voltage levels m grows, the number of active switches increases according to $2 \times (m-1)$ for the cascaded H-bridge, diode-clamped, and flying-capacitor multilevel inverters. In addition, for each phase, the diode-clamped inverter requires at least $2 \times (m-2)$ clamping diodes and $(m-1)$ capacitors for dividing the dc voltage, and the flying-capacitor inverter needs $(m-2)$ clamping capacitors.

This paper presents a new class of multilevel inverters based on an MLDCL and a bridge inverter with a new variable frequency inverted sine carrier PWM implementation [12] under equal switching transition. Compared with the