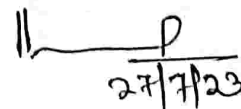


LESSON PLAN OF 5TH SEMESTER(2023-24) CIVIL ENGINEERING

Discipline :- CIVIL ENGG.	Semester:-5 TH	Name of the Teaching Faculty Swatika samal
Subject:- Railway and Bridge engg. (Th-3)	No of Days/per Week Class Allotted :-04	Semester From:- <u>01/08/2023</u> To:- <u>30/11/2023</u> No of Weeks:- 18
Week	Class Day	Theory/ Practical Topics
1 st	1 st	1.Introduction : 1.1Railway terminology
	2 nd	1.2Advantages of railways 1.3Classification of Indian Railways
	3 rd	2. Permanent way 2.1Definition
	4 th	2.2components of a permanent way
2 nd	1 st	2.3Concept of gauge
	2 nd	2.4different gauges prevalent in India
	3 rd	2.5suitability of these gauges under different
	4 th	3.Track materials 3.1Rails 3.1.1Functions and requirement of rails
3 rd	1 st	3.1.2Types of rail sections , length of rails 3.1.3Rail joints – types, requirement of an ideal joint
	2 nd	3.1.4 Purpose of welding of rails & its advantages 3.1.5 Creep definition, cause & prevention
	3 rd	3.2Sleepers 3.2.1Definition, function & requirements of sleepers 3.2.2 Classification of sleepers 3.2.2 Advantages & disadvantages of different types of sleepers
	4 th	3.3Ballast
4 th	1 st	3.3.1Functions & requirements of ballast
	2 nd	3.3.2 Materials for ballast
	3 rd	3.4 Fixtures for Broad gauge
	4 th	3.4.1Connection of rails to rail-fishplate, fish bolts
5 th	1 st	3.4.2Connection of rails to sleepers
	2 nd	4.Geometric for Broad gauge 4.1Typical cross section
	3 rd	4.2 Single broad gauge railway track in cutting
	4 th	4.3double broad gauge railway track in cutting
6 th	1 st	4.4 embankment
	2 nd	4..5 Permanent & temporary land width
	3 rd	4.6Gradients for drainage
	4 th	4.7limiting valued
7 th	1 st	4.8, Super elevation – necessity


27/7/23

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	2 nd	Numerical problem
	3 rd	Numerical problem
	4 th	Numerical problem
8 th	1 st	Numerical problem
	2 nd	5.0 Points and crossings 5.1 Definition
	3 rd	5.2 Necessity of crossings
	4 th	5.3 Necessity of points
9 th	1 st	5.4 Types of points
	2 nd	5.5 types of crossings with tie diagrams
	3 rd	5.6 diagram.
	4 th	6. Laying & maintenance of track 6.1 Methods of laying
10 th	1 st	6.2 maintenance of track
	2 nd	6.3 Duties of a permanent way inspector
	3 rd	Section – B : BRIDGES 1. Introductions to bridges 1.1 Definitions
	4 th	1.2 Components of a bridge
11 th	1 st	1.3 Classification of bridges
	2 nd	1.4 Requirements of an ideal bridge
	3 rd	2. Bridge Site investigation, hydrology & planning 2.1 Introduction
	4 th	2.2 Alignment
12 th	1 st	2.3 Selection of bridge site
	2 nd	2.4 Bridge alignments
	3 rd	2.5 Determination of flood discharge
	4 th	2.6 Waterway & economic span
13 th	1 st	2.7 free board
	2 nd	2.8 Afflux, clearance
	3 rd	3. Bridge foundation 3.1 Introduction
	4 th	3.2 Scour depth minimum depth of foundation
14 th	1 st	3.3 Types of bridge foundation
	2 nd	3.4 pile foundation- pile driving
	3 rd	3.5 well foundation – sinking of wells
	4 th	3.6 caisson foundation
15 th	1 st	3.7 foundations – spread foundation
	2 nd	3.8 Cofferdams
	3 rd	4. Bridge substructure and approaches 4.1 Types of piers
	4 th	4.2 Types of abutments
16 th	1 st	4.3 Types of wing walls
	2 nd	4.4 Approaches
	3 rd	5. Culvert & cause ways 5.1 Types of culvers - brief description
	4 th	5.2 Types of causeways - brief description
17 th	1 st	5.3 Problem Practice on level crossing design
	2 nd	5.4 Problem Practice on Geometric Design
	3 rd	PREVIOUS YEAR QUESTION DISCUSSION
	4 th	PREVIOUS YEAR QUESTION DISCUSSION
18 th	1 st	Problem Practice on Gradient
	2 nd	Problem Practice on Super-elevation
	3 rd	PREVIOUS YEAR QUESTION DISCUSSION
	4 th	REVISION