LESSON PLAN OF 5TH SEMESTER(2024-25) CIVIL ENGINEERING

Discipline: - CIVIL ENGG.	Semester:-5TH	Name of Teaching Faculty: SWAGATIKA SAMAL(Lecturer)
Subject:- Railway and Bridge Engg.(Th.3)	No of Days/per Week Class Allotted :-04	Semester From:- 01/07/2024 To:- 08/11/2024 No of Weeks:- 15
Week	**Class Day**	**Theory/ Practical Topics**
1st	1st	**Section-A: RAILWAYS** **1.Introduction :** 1.1Railway terminology
	2nd	1.2Advantages of railways 1.3Classification of Indian Railways
	3rd	**2. Permanent way** 2.1Definition
	4th	2.2components of a permanent way
2nd	1st	2.3Concept of gauge
	2nd	2.4 gauges prevalent in India
	3rd	2.5suitability of these gauges under different
	4th	**3.Track materials** 3.1Rails 3.1.1Functions and requirement of rails
3rd	1st	3.1.2Types of rail sections , length of rails 3.1.31.3Rail joints – types, requirement of an ideal joint
	2nd	3..1.4 Purpose of welding of rails & its advantage 3.1.5 Creep definition, cause & prevention
	3rd	3.2Sleepers 3.2.1Definition, function & requirements of sleepers 3.2.2 Classification of sleepers 3.2.3 Advantages & disadvantages of different types of sleepers
	4th	3.3Ballast 3.3.1Functions & requirements of ballast 3.3.2Materials for ballast
4th	1st	3.4Fixtures for Broad gauge 3.4.1Connection of rails to rail-fishplate, fish bolts 3.4.2Connection of rails to sleepers
	2nd	**4.Geometric for Broad gauge** 4.1Typical cross – sections of single
	3rd	double broad gauge railway track in cutting
	4th	embankment
5th	1st	4.2 Permanent & temporary land width
	2nd	4.3 Gradients for drainage
	3rd	4.4Super elevation – necessity & limiting valued
	4th	Numerical problem
6th	1st	Numerical problem
	2nd	Numerical problem
	3rd	Numerical problem
	4th	**5.0 Points and crossings**
7th	1st	5.1 Definition,

	2nd	necessity of Points and crossings
	3rd	5.2 Types of points
	4th	types of crossings with tie diagrams
8th	1st	diagrams
	2nd	**6.0 Laying & maintenance of track**
	3rd	6.1 Methods of Laying
	4th	maintenance of track
9th	1st	6.2Duties of a permanent way inspector
	2nd	**Section – B : BRIDGES** **1.Introductions to bridges** 1.1Definitions 1.2Components of a bridge
	3rd	1.3Classification of bridges. 1.4Requirements of an ideal bridge
	4th	2. Bridge Site investigation, hydrology & planning 2.1Selection of bridge site
10th	1st	2.1 Bridge alignments
	2nd	2.2 Determination of flood discharge
	3rd	2.3 Waterway & economic span
	4th	2.4 Afflux, clearance & free board
11th	1st	**3.Bridge foundation**
	2nd	3.1Scour depth minimum depth of foundation 3.2Types of bridge foundation
	3rd	pile foundation-, pile driving,
	4th	well foundation – sinking of wells caission foundation
12th	1st	foundations – spread foundation
	2nd	3.3 Coffer dams
	3rd	**4. Bridge substructure and approaches** 4.1Types of piers
	4th	4.2 Types of abutments
13th	1st	4.3 Types of wing walls
	2nd	4.4 Approaches
	3rd	**5.Culvert & cause ways** 5.1Types of culvers - brief description
	4th	5.2 Types of causeways - brief description
14th	1st	Problem Practice on level crossing design
	2nd	Problem Practice on Geometric Design
	3rd	PREVIOUS YEAR QUESTION DISCUSSION
	4th	PREVIOUS YEAR QUESTION DISCUSSION
15th	1st	Problem Practice on Gradient
	2nd	Problem Practice on Superellevation
	3rd	PREVIOUS YEAR QUESTION DISCUSSION
	4th	REVISION

Revised

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