

IDEAL SCHOOL OF ENGINEERING,RETANG-752054

DISCIPLINE: CIVIL ENGINEERING	SEMESTER: 5 TH SEM	NAME OF THE TEACHING FACULTY : ER.MONALISHA MOHAPATRA & ER.PADMINI PRAGYANSINI BARAL
SUBJECT: RAILWAY AND BRIDGE ENGINEERING (TH-3)	No of Days/ Per week class allotted:4 Class P/W (60)	Semester From Date: 15/09/2022 To Date: 22/12/2022 No. Of Weeks: 15
WEEK	CLASS DAY	THEORY TOPICS SECTION-A
1 st	1 st	Introduction :Railway terminology
	2 nd	Advantages of railways & Classification of Indian Railways,
	3 rd	Permanent way : Definition and components of a
	4 th	Concept of gauge, different gauges prevalent in India, suitability of these gauges under different conditions.
2 nd	1 st	Track materials :Rails & Functions and requirement of rails
	2 nd	Types of rail sections, length of rails.
	3 rd	Rail joints – types, requirement of an ideal joint.
	4 th	Purpose of welding of rails & its advantages and Creep- definition, cause & prevention
3 rd	1 st	Sleepers and Definition, function & requirements of sleepers.
	2 nd	Classification of sleepers and Advantages & disadvantages of different types of sleepers
	3 rd	Ballast and Functions & requirements of ballast.
	4 th	Materials for ballast and Fixtures for Broad gauge.
4 th	1 st	Connection of rails to rail-fishplate, fish bolts and
	2 nd	Revision of last class About Material and Connection of rail.
	3 rd	Geometric for broad gauge : Typical cross – sections of single & double broad gauge railway track in cutting and embankment Permanent & temporary land width.
	4 th	Giving Assignment Questions and Doubt
		Clearing Class.
	1 st	Gradients for drainage

5 th	2 nd	Super elevation – necessity & limiting valued
	3 rd	Revision of last Class About gradient And Giving
	4 th	Checking Assignment AND Revised
6 th	1 st	Points and crossings of Rail
	2 nd	Definition, necessity of Points and crossings.
	3 rd	Types of points & crossings with tie diagrams.
	4 th	Revising diagram of rail crossing and points.
7 th	1 st	Laying of track of rail.
	2 nd	Duties of a permanent way inspector.
	3 rd	Important question discussion like Cant Deficiency and
	4 th	Previous year question and answer discussion.
8 th	1 st	Maintenance of track of rail.
	2 nd	Doubt Clearing Class And Giving Assignment Questions.
	3 rd	Checking Assignment Questions And Revised.
	4 th	Previous year question and answer discussion.
9 th	1 st	<u>SECTION-B</u> Introduction to bridges: Definitions
	2 st	Components of a bridge.
	3 rd	Classification of bridges.
	4 th	Requirements of an ideal bridge.
10 th	1 st	Bridge site investigation, hydrology & planning.
	2 nd	Selection of bridge site, Alignment.
	3 rd	Determination of Flood Discharge.
	4 th	Waterway & economic span.
11 th	1 st	Afflux, clearance & free board
	2 nd	Bridge foundation.
	3 rd	Scour depth minimum depth of foundation.
	4 th	Types of bridge foundations – spread foundation, pile foundation- well foundation – sinking of wells.
12 th	1 st	caisson foundation and Cofferdams
	2 nd	Bridge substructure and approaches.
	3 rd	Types of piers.
	4 th	Types of abutments.
13 th	1 st	Types of wing walls.
	2 nd	Approaches

13 th	3 rd	Recalling the term abutment and their uses in Bridge.
	4 th	Previous year question Discussion and Practice.
14 th	1 st	Culvert
	2 nd	Types of culvers.
	3 rd	Brief description of Culvert
	4 th	Recalling Previous year questions and answers.
15 th	1 st	Cause ways.
	2 nd	Types of causeways
	3 rd	Brief description of Cause way.
	4 th	Recalling Previous year questions and answers.