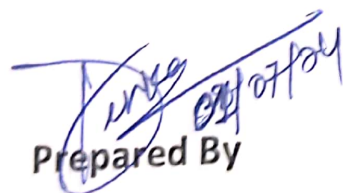


ACADEMIC SESSION: WINTER-2024

Discipline : Civil Engg.	Semester: 5 th	Name of the Teaching Faculty : Sumit Sahu
Subject: Railway & Bridge engg.	No. of Days / Week class allotted: 4	Semester Duration: 01/07/2024 to 09/11/2024 No. of Weeks : 19
Week	Class day	Theory/Practical Topics:
1 st	1 st	Railway terminology, Advantages of railways
	2 nd	Classification of Indian Railways
	3 rd	Definition and components of a permanent way
	4 th	Concept of gauge
2 nd	1 st	different gauges prevalent in India
	2 nd	suitability of these gauges under different conditions
	3 rd	Rails ,Functions and requirement of rails
	4 th	Types of rail sections, length of rails
3 rd	1 st	Rail joints – types, requirement of an ideal joint
	2 nd	Purpose of welding of rails & its advantages
	3 rd	Creep- definition, cause & prevention
	4 th	Sleepers, Definition, function & requirements of sleepers
4 th	1 st	Durg puja holiday
	2 nd	
	3 rd	
	4 th	
5 th	1 st	Classification of sleepers, Advantages & disadvantages of different types of sleepers
	2 nd	Ballast ,Functions & requirements of ballast , Materials for ballast
	3 rd	Fixtures for Broad gauge
	4 th	Connection of rails to rail-fishplate, fish bolts Connection of rails to sleepers
6 th	1 st	Typical cross – sections of single & double broad gauge railway track in cutting and embankment
	2 nd	Typical cross – sections of single & double broad gauge railway track in cutting and embankment(2 nd class)
	3 rd	Permanent & temporary land width

	4 th	Permanent & temporary land width (2 nd class)
7 th	1 st	Gradients for drainage
	2 nd	Gradients for drainage (2 nd class)
	3 rd	Super elevation
	4 th	necessity & limiting valued
8 th	1 st	Definition, necessity of Points and crossings
	2 nd	Types of points & crossings with tie diagrams
	3 rd	Types of points & crossings with tie diagrams (2 nd class)
	4 th	
9 th	1 st	Methods of Laying & maintenance of track
	2 nd	Methods of Laying & maintenance of track (2 nd class)
	3 rd	Duties of a permanent way inspector
	4 th	Introduction to bridges
10 th		Definitions
	1 st	Introduction to bridges Definitions
	2 nd	Components of a bridge
	3 rd	Components of a bridge
11 th	4 th	Classification of bridges
	1 st	requirements of an ideal bridge
	2 nd	Classification of bridges
	3 rd	Requirements of an ideal bridge
12 th	4 th	Bridge site investigation, hydrology & planning
	1 st	Selection of bridge site, Alignment
	2 nd	Bridge site investigation, hydrology & planning
	3 rd	Selection of bridge site, Alignment
13 th	4 th	Determination of Flood Discharge
	1 st	Determination of Flood Discharge
	2 nd	Waterway & economic span
	3 rd	Waterway & economic span
14 th	4 th	Waterway & economic span
	1 st	PUJA HOLIDAYS
	2 nd	
	3 rd	
	4 th	
15 th	1 st	Afflux, clearance & free board
		Bridge foundation
	2 nd	Scour depth minimum depth of foundation
		Bridge foundation
16 th	3 rd	Scour depth minimum depth of foundation
	4 th	Types of bridge foundations – spread foundation
	1 st	Types of bridge foundations – spread foundation
		pile foundation- well foundation – sinking of wells, caisson foundation
17 th	2 nd	pile foundation- well foundation – sinking of wells, caisson foundation
		foundation

16 th	3 rd	Coffer dams
	4 th	Coffer dams
	1 st	Bridge substructure and approaches Types of piers
	2 nd	Bridge substructure and approaches Types of piers
	3 rd	Bridge substructure and approaches Types of piers
17 th	4 th	Types of abutments
	1 st	Types of abutments
	2 nd	Types of wing walls Approaches
	3 rd	Types of wing walls Approaches
18 th	4 th	Culvert & Cause ways Types of culvers – brief description
	1 st	Culvert & Cause ways Types of culvers – brief description
	2 nd	Culvert & Cause ways Types of culvers – brief description
	3 rd	Types of causeways – brief description
19 th	4 th	Types of causeways – brief description
	1 st	Types of causeways – brief description
	2 nd	Doubt clearing sessions
	3 rd	Doubt clearing sessions
	4 th	Previous year question discussion


Prepared By


Approved by