ACADEMIC SESSION: WINTER-2024

Discipline : Civil Engg.	Semester: 5th	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:**
1st	1st	Railway terminology, Advantages of railways
	2nd	Classification of Indian Railways
	3rd	Definition and components of a permanent way
	4th	Concept of gauge
2nd	1st	different gauges prevalent in India
	2nd	suitability of these gauges under different conditions
	3rd	Rails ,Functions and requirement of rails
	4th	Types of rail sections, length of rails
3rd	1st	Rail joints – types, requirement of an ideal joint
	2nd	Purpose of welding of rails & its advantages
	3rd	Creep- definition, cause & prevention
	4th	Sleepers, Definition, function & requirements of sleepers
4th	1st	**Durg puja holiday**
	2nd	
	3rd	
	4th	
5th	1st	Classification of sleepers, Advantages & disadvantages of different types of sleepers
	2nd	Ballast ,Functions & requirements of ballast , Materials for ballast
	3rd	Fixtures for Broad gauge
	4th	Connection of rails to rail-fishplate, fish bolts Connection of rails to sleepers
6th	1st	Typical cross – sections of single & double broad gauge railway track in cutting and embankment
	2nd	Typical cross – sections of single & double broad gauge railway track in cutting and embankment(2nd class)
	3rd	Permanent & temporary land width

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

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

Prepared By

Approved by