

ARYAN SCHOOL OF ENGINEERING & TECHNOLOGY

Dicipline:	Civil Engg.	Semester: 5th	Name of the Teaching Faculty: <u>Sanjhamitra Mohapatra</u>	
Subject:	Railway & Bridge Engineering	No of Days/Week Class Allotted: <u>4</u>	Semester From date: <u>15/09/22</u> To date: _____	No. of Weeks: <u>15</u>

WEEK	Class Day	Theory Topics
1st	1st 15-09-22	Introduction - Railway, classification
	2nd 16-09-22	Railway terminology, advantages, permanent way
	3rd	
	4th	
	5th	
2nd	1st 19-09-22	Concept of gauge, different gauges prevalent in India
	2nd 21-09-22	Suitability of gauges, under different cond ⁿ
	3rd 22-09-22	Track materials - rails, function & requirement of rail
	4th 24-09-22	Types of rail section, length of rails.
	5th	
3rd	1st 26-09-22	Purpose of welding of rails & its advantages Rail joints.
	2nd 28-09-22	Creep - Definition, cause & prevention
	3rd 29-09-22	Sleepers - Def ⁿ , function & requirement of sleepers.
	4th 01-10-22	Classification of sleepers, advantages & disadvantages
	5th	

WEEK	Class Day	Theory Topics
4 th	1st 10.10.22	Ballast - function & requirement of ballast materials for ballast.
	2nd 12.10.22	Fixtures for broad gauge, connection of rails to rail postplate
	3rd 13.10.22	Fish bolts, connection of rails to sleepers
	4th 15.10.22	Doubt clearing class
	5th	
5 th	1st 17.10.22	Geometric for broad gauge - Introduction & design
	2nd 19.10.22	Typical cross-section of single & double broad gauge.
	3rd 20.10.22	Cross-section of railway track in cutting and embankment.
	4th 22.10.22	Permanent & temporary land widths.
	5th	
6 th	1st 24.10.22	Gradients - types, necessity
	2nd 26.10.22	Gradient & Super elevation - Def ⁿ , necessity
	3rd 27.10.22	Super elevation derivation
	4th 29.10.22	Problems in Super elevation
	5th	

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WEEK	Class Day	Theory Topics
7th	1st 31.10.22	Problem practice
	2nd 2.11.22	Super elevation limiting value
	3rd 3.11.22	Point and crossing - Def ⁿ & necessity
	4th 5.11.22	Types of points with diagrams
	5th	
8th	1st 7.11.22	Types of crossing with tie diagram.
	2nd 9.11.22	Doubt clearing class
	3rd 10.11.22	Laying - Method of Laying, necessity
	4th 12.11.22	Maintenance of track -
	5th	
9th	1st 14.11.22	Duties of a permanent way inspector.
	2nd 16.11.22	Introduction to bridge - Def ⁿ , terms.
	3rd 17.11.22	Different components of a bridge.
	4th 19.11.22	Classification of bridges, requirement of an ideal bridge.
	5th	

WEEK	Class Day	Theory Topics
10 th	1st 21.11.22	Bridge site investigation - selection of bridge site.
	2nd 23.11.22	Alignment of bridge
	3rd 24.11.22	Determination of flood discharge,
	4th 26.11.22	waterway & Economic span.
	5th	
11 th	1st 28.11.22	Afflux, clearance & freeboard.
	2nd 30.11.22	Doubt clearing class.
	3rd 1.12.22	Requirement of Bridge site investigation & planning.
	4th 3.12.22	class test.
	5th	
12 th	1st 5.12.22	Bridge foundation - scour depth min ^m depth of foundation
	2nd 7.12.22	Types of bridge foundation with diagrams - spread foundation
	3rd 8.12.22	Pile foundation - Different types & their uses.
	4th 10.12.22	Well foundation - sinking of wells, caisson foundation with diagram, Necessity foundat?
	5th	

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13 th	1st 12.12.22	Cofferdam - Component, terms, Necessity.		
	2nd 14.12.22	Bridge structures - Types of pier, abutments, with diagrams & etc.		
	3rd 15.12.22	Types of wing wall, Detailed features, Necessity and approaches.		
	4th 17.12.22	Culvert - Introduction, Types of culvert.		
	5th			
14 th	1st 19.12.22	Pipe - Arch culvert (single or multiple), Box culvert (")		
	2nd 21.12.22	Details and advantages of different type of culvert.		
	3rd 22.12.22	Causeway, Types of causeway.		
	4th 24.12.22	Brief description of Non-vented causeway.		
	5th			
15 th	1st	Vented causeway, high level causeway.		
	2nd	Doubt clearing class.		
	3rd	Assignment and class Test.		
	4th	Doubt clearing class.		
	5th			