

G.P. DHANGAR (Fatehabad)

Name of Faculty : Er. Sandeep

Discipline : CIVIL ENGG.

Semester : 5th sem

Subject : RAILWAYS, BRIDGES AND TUNNELS

Week	Lecture No.	Topic Covered
1	1	Introduction to Indian Railways
	2	Railway surveys: Factors influencing the railways route, brief description of various types of railway survey
	3	Classification of permanent way describing its component parts
	4	Rail Gauge: Definition, types, practice in India
2	5	Rails – types of rails
	6	Revision
	7	Rail Fastenings: Rail joints, types of rail joints
	8	Fastenings for rails, fish plates, bearing plates
3	9	Functions of sleepers, types of sleepers, requirements of an ideal material for sleepers.
	10	Function of ballast, requirements of an ideal material for ballast
	11	Brief description regarding different types of crossings/ signalling
	12	Necessity, maintenance of track, inspection of soil, track and fixtures
4	13	Maintenance and boxing of ballast maintenance gauges, tools
	14	Features of rail road, bed level, width of formation, side slopes, drains
	15	Methods of construction, requirement of drainage system
	16	Revision
5	17	Revision
	18	Bridge – its function and component parts
	19	Difference between a bridge and a culvert
	20	Revision
6	21	Classification of Bridges
	22	Classification of Bridges
	23	Classification of Bridges
	24	IRC classification
7	25	Revision
	26	Revision
	27	Introduction to open foundation, pile foundation, well foundation
	28	Revision
8	29	Piers-definition, parts; types –solid (masonry and RCC), open
	30	Revision
	31	Abutments and wing walls – definition, types of abutments
	32	Revision
9	33	Launching of Equipment Bridges
	34	Revision

	35	Purpose of bearings; types of bearings – fixed plate, rocker and roller.
	36	Purpose of bearings; types of bearings – fixed plate, rocker and roller.
10	37	Revision
	38	Maintenance of Bridges
	39	Inspection of Steel and Equipment bridges
	40	Revision
11	41	Routine maintenance
	42	Revision
	43	Definition and necessity of tunnels
	44	Revision
12	45	Typical section of tunnels for a national highway and single and double broad gauge railway track
	46	Revision
	47	Ventilation –necessity and methods of ventilation by blowing
	48	Ventilation by exhaust and combination of blowing and exhaust
13	49	Drainage method of draining water in tunnels
	50	Revision
	51	Lighting of tunnels
	52	Revision