

**Department of Civil Engineering**

**5th Semester Winter 2021**

**Theory No: 3**

**Subject: Railway & Bridge Engineering**

*MCULLY NAME - S. Tejapathy*

Sl No	Week No	Period		Numbers of Classes to be Scheduled	Topics to be covered	Remarks
		From	To			
1	W 1	01-10-2021	08-10-2021	5	1.1 Importance of Highway transportation: importance organizations like Indian roads congress, Ministry of Surface Transport, Central Road Research Institute. 1.2 Functions of Indian Roads Congress 1.3 IRC classification of roads 1.4 Organisation of state highway department 2.1 Glossary of terms used in geometric and their importance, right of way, formation width, road margin, road shoulder, carriage way, side slopes, kerbs, formation level, camber and gradient	02/10,03/10,06/10 is Holiday.
2	W 2	11-10-2021	22-10-2021	5	2.2 Design and average running speed, stopping and passing sight distance	
3	W 3	25-10-2021	29-10-2021	5	2.3 Necessity of curves, horizontal and vertical curves including transition curves and super elevation, Methods of providing super-elevation 3.1 Difference types of road materials in use : sol, aggregates, binders 3.2 Function of soil as highway subgrade 3.3 California Bearing Ratio : methods of finding CBR valued in the laboratory and at site and their significance	

*Sampath*

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4	W 4	30-10-2021	03-11-2021	5	3.4 Testing aggregates : Abrasion test, impact test, crushing strength test, water absorption test & soundness test 3.5 Aggregates : Availability of road aggregates in India, Requirements of road aggregates as per IS specifications 3.6 Binders : common binders : cement, bitumen and Tar, properties as per IS specifications, penetration and viscosity test of bitumen, procedure and a significance of cut back bitumen and bituminous emulsion and their uses	
5	W 5	05-11-2021	10-11-2021	5	4.1 Road Pavement : Flexible and rigid pavement, their merits and demerits, typical cross-sections, functions of various components 4.2 Sub-grade preparation : Setting out alignment of road, setting out bench marks, control pegs for embankment and cutting, borrow pits, making profile of embankment, construction of embankment, compaction, stabilization, preparation of subgrade, methods of checking camber, gradient and alignment as per recommendations of IRC, equipment used for subgrade preparation 4.3 Flexible pavements : necessity of sub base, stabilized sub base: purpose of stabilization(no designs) Types of stabilization "a Mechanical stabilization b. Lime stabilization c. Cement stabilization d. Fly ash stabilization	12th and 15th Aug'19 are holiday
6	W 6	11-11-2021	16-11-2021	5	4.4 Base Course :Preparation of base course a. Brick soling b. Stone soling c. Metalling : Water Bound Macadam and Bituminous Macadam 4.5 Surfacing : Types of surfacing a. Surface dressing b. (i) Premix carpet (ii) Semi dense carpet c. Bituminous concrete d. Grouting Methods of constructions as per Ministry of Surface Transport, specifications and quality control 4.6 Rigid Pavements : Construction of concrete roads as per IRC specifications : From laying, mixing and placing the concrete, compacting and finishing, curing, joints in concrete pavement, equipment used.	14/11/2021 is holiday.
7	W 7	17-11-2021	23-11-2021	5	5.1 Introduction :Typical cross-sections showing all details of a typical hill road in cut, partly in cutting and partly in filling 5.2 Breast Walls, Retaining walls.	19/11,23/11 is holiday

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8	W 8	24-11-2021	29-11-2021	5	different types of bends 6.1 Necessity of road drainage work, cross drainage works 6.2 Surface and sub-surface drains and storm water drains. Location, spacing and typical details of side drains, side ditches for surface drainage, intercepting drains	28/11 is holiday.
9	W 9	30-11-2021	04-12-2021		pipe drains in hill roads, details of drains in cutting embankment, typical cross sections 7.1 Common types of road failures – their causes and remedies 7.2 Maintenance of bituminous road such as patch work and resurfacing	
10	W 10	06-12-2021	08-12-2021	5	7.3 Maintenance of concrete roads – filling cracks, repairing joints, maintenance of shoulders (berm), maintenance of traffic control devices. Output and use of the following plant and equipment :8.1 Hot mixing plant8.2 Tipper, tractors (wheel and crawler) scraper, bulldozer, dumpers, shovels, graders, roller dragline8.3 Asphalt mixer and tar boilers	
11	W 11	09-12-2021	11-12-2021	3	8.4 Road pavers 8.5 Modern construction equipments for roads. 9.1 Basic concept of traffic study 9.2 Traffic safety and traffic control signal 9.3 Road junctions	28th Sept'19 is holiday
12	W 12	13-12-2021	15-12-2021	3	9.4 Traffic island and refuge island; advantages and disadvantages 10.1 Meaning of landscaping and arboriculture 10.2 Aesthetics in road side development	2nd and 5th Oct'19 is holiday
13	W 13	16-02-2021	18-12-2021	3	Revision	
14	W 14	20-12-2021	22-12-2021	3	Revision	
15	W 15	23-12-2021	27-12-2021	3	Revision	25/12,26/12 are holidays.
<b>Total</b>	<b>15</b>					

*[Handwritten Signature]*

*Somnath Singh*