PROGRAMME : CIVIL ENGINEERING COURSE NAME : HIGHWAY ENGINEERING

COURSE CODE : TH-4 SEMESTER : 4TH NAME OF THE FACULTY: UTKALIKA PRADHAN

SESSION: SUMMER PERIODS/WEEK: 5 TOTAL PERIODS: 75

CLASS	TOPIC
1	Importance of Highway transportation: importance organizations like Indian roads congress, Ministry of
	Surface Transport, Central Road Research Institute.
2	Functions of Indian Roads Congress, Organisation of state highway department
3	IRC classification of roads
4	Road geometrics: Cross-sectional elements like carriage way, road margin, road shoulder, formation
and t	width
5	Cross-sectional elements: right of way, camber, side slopes, kerbs, formation level, gradient etc
6	Different cross sections road
7	Design and average running speed
8	Stopping Sight Distance(SSD): Definition, Analysis of SSD
9	Stopping Sight Distance: Numerical problems
10	Overtaking Sight Distance(OSD): Definition, Analysis of OSD
11	Overtaking Sight Distance: Derivations
12	Overtaking Sight Distance: Numerical problems
13	Curves: Necessity of curves, Types of curves
14	Horizontal Curves: Definitions, Examples
15	Super elevation: Definition, Analysis of super elevation
16	Numerical problems on analysis of super elevation
17	Design of super elevation
18	Numerical problems on super elevation design
19	Methods of providing super elevation
20	Vertical curves: Definition, types; Transition curves: Definition, types
21	Difference types of road materials in use: soil, aggregates, and binders
22	Function of soil as highway Subgrade , properties of soil
23	Aggregates: types, properties
24	Binders: types, properties
25	California Bearing Ratio: methods of finding CBR valued in the laboratory and at site and their
	significance
26	Testing aggregates: Abrasion test, Impact test,
27	Crushing strength test, Water absorption test & Soundness test
28	Road Pavement: Flexible and rigid pavement, their merits and demerits,
29	Typical cross-sections of pavements
30	Functions of various components of flexible & rigid pavements
31	Flexible pavement: Subgrade preparation,
32	Sub base Course: Necessity of sub base, stabilized sub base, purpose of stabilization
33	Types of stabilization: Mechanical stabilization ,Lime stabilization
34	Cement stabilization ,Fly ash stabilization
35	Base Course: Preparation of base course, Brick soling, stone soling and metalling, Water Bound
	Macadam and wet-mix Macadam,
36	Bituminous constructions: Different types
37	Surfacing: Surface dressing [(i) Premix carpet and (ii) Semi dense carpet]
	Bituminous concrete, Grouting

Hill Roads: Introduction, Importance Typical cross-sections showing all details of a typical hill road in cut, partly in cutting and partly in filling Typical cross-sections showing all details of a typical hill road in cut, partly in cutting and partly in filling Different types of bends Different types of bends Road Drainage: Necessity of road drainage work Location, spacing and typical details of side drains, side ditches for surface drainage Location, spacing and typical details of side drains, side ditches for surface drainage Location, spacing and typical details of side drains, side ditches for surface drainage Road Maintenance: Definition, different methods Road Maintenance: Necessity, Different types of road failures Causes & remedies of failures Maintenance of failures Maintenance of concrete roads – filling cracks, repairing joints Maintenance of concrete roads – filling cracks, repairing joints Maintenance of shoulders (berm), Maintenance of traffic control devices Traffic signs: Definition & types with diagram Traffic signs: Definition & types with diagram Traffic signs: Definition & types Pavement markings: types Pavement markings: types Pavement markings: types Construction equipments: Preliminary ideas, Different types of equipments Construction equipments: Preliminary ideas Preliminary ideas on Dillozer, dumpers, shovels, graders, roller dragline Road pavers: types & uses Modern construction equipments for roads. Revision of important topics Revision of most probable questions(Short type) Discussion of most probable questions(Long type) To Discussion of most probable questions(Long type) Discussion of most probable questions(Long type)	38	Rigid Pavements: Concept of concrete roads as per IRC specifications
Typical cross-sections showing all details of a typical hill road in cut, partly in cutting and partly in hilling Breast Walls, Retaining walls Different types of bends Road Drainage: Necessity of road drainage work Cross drainage: Necessity of road drainage work Cross drainage: Pefinition, methods Location, spacing and typical details of side drains, side ditches for surface drainage Definition, different methods Details of drains in cutting embankment, typical cross section Road Maintenance: Necessity, Different types of road failures Causes & remedies of failures Maintenance of bituminous road such as patch work and resurfacing Maintenance of bituminous road such as patch work and resurfacing Maintenance of shoulders (berm), Maintenance of traffic control devices Maintenance of shoulders (berm), Maintenance of traffic control devices Traffic safety: traffic control devices Traffic signals: Definition & types with diagram Traffic signals: Definition & types with diagram Traffic signals: Definition & types Pavement markings: types Construction equipments: Preliminary ideas, Different types of equipments Hot mixing plant;: preliminary ideas Asphalt mixer and tar boilers Preliminary ideas on Tipper, tractors (wheel and crawler) scraper Preliminary ideas on Dilper, tractors (wheel and crawler) scraper Preliminary ideas on Tipper, tractors (wheel and crawler) scraper Revision of important topics Revision of most probable questions(Short type) Discussion of most probable questions(Cong type) Discussion of most probable questions(Cong type)	1774	Hill Poads: Introduction, Importance
41 Breast Walls, Retaining walls 42 Different types of bends 43 Road Drainage: Necessity of road drainage work 44 Cross drainage works 45 Surface drainage: Definition, methods 46 Location, spacing and typical details of side drains, side ditches for surface drainage 47 Sub-surface drainage: Definition, different methods 48 Details of drains in cutting embankment, typical cross section 49 Road Maintenance: Necessity, Different types of road failures 50 Causes & remedies of failures 51 Maintenance of bituminous road such as patch work and resurfacing 52 Maintenance of concrete roads – filling cracks, repairing joints 53 Maintenance of shoulders (berm), Maintenance of traffic control devices 54 Basic concept of traffic study 55 Traffic signs: Definition & types with diagram 57 Traffic signs: Definition & types 58 Pavement markings: types 59 Construction equipments: Preliminary ideas, Different types of equipments 60 Hot mixing plant; preliminary ideas 61 Asphalt mixer and tar boilers 62 Preliminary ideas on Tipper, tractors (wheel and crawler) scraper 63 Preliminary ideas on bulldozer, dumpers, shovels, graders, roller dragline 64 Road pavers: types & uses 65 Modern construction equipments for roads. 66 Revision of important topics 67 Revision of important topics 68 Revision of important topics 69 Revision of most probable questions(Short type) 70 Discussion of most probable questions(Short type) 71 Discussion of most probable questions(Long type) 72 Discussion of most probable questions(Long type)		Typical cross-sections showing all details of a typical hill road in cut, partly in cutting and partly in filling
42 Different types of bends 43 Road Drainage: Necessity of road drainage work 44 Cross drainage works 45 Surface drainage: Definition, methods 46 Location, spacing and typical details of side drains, side ditches for surface drainage 47 Sub-surface drainage: Definition, different methods 48 Details of drains in cutting embankment, typical cross section 49 Road Maintenance: Necessity, Different types of road failures 50 Causes & remedies of failures 51 Maintenance of bituminous road such as patch work and resurfacing 52 Maintenance of concrete roads – filling cracks, repairing joints 53 Maintenance of shoulders (berm), Maintenance of traffic control devices 54 Basic concept of traffic study 55 Traffic signs: Definition & types with diagram 57 Traffic signsis: Definition & types 58 Pavement markings: types 59 Construction equipments: Preliminary ideas, Different types of equipments 60 Hot mixing plant; preliminary ideas 61 Asphalt mixer and tar boilers 62 Preliminary ideas on Tipper, tractors (wheel and crawler) scraper 63 Preliminary ideas on bulldozer, dumpers, shovels, graders, roller dragline 64 Road pavers: types & uses 65 Modern construction equipments for roads. 66 Revision of important topics 67 Revision of important topics 68 Revision of important topics 70 Revision of important topics 71 Discussion of most probable questions(Short type) 72 Discussion of most probable questions(Clong type) 73 Discussion of most probable questions(Clong type)		
43 Road Drainage: Necessity of road drainage work 44 Cross drainage works 45 Surface drainage: Definition, methods 46 Location, spacing and typical details of side drains, side ditches for surface drainage 47 Sub-surface drainage: Definition, different methods 48 Details of drains in cutting embankment, typical cross section 49 Road Maintenance: Necessity, Different types of road failures 50 Causes & remedies of failures 51 Maintenance of bituminous road such as patch work and resurfacing 52 Maintenance of shoulders (berm), Maintenance of traffic control devices 53 Maintenance of shoulders (berm), Maintenance of traffic control devices 54 Basic concept of traffic study 55 Traffic safety: traffic control devices 56 Traffic signs: Definition & types with diagram 57 Traffic signs: Definition & types with diagram 57 Traffic signals: Definition & types 59 Construction equipments: Preliminary ideas, Different types of equipments 60 Hot mixing plant; preliminary ideas 61 A Sphalt mixer and tar boilers 62 Preliminary ideas on Tipper, tractors (wheel and crawler) scraper 63 Preliminary ideas on bulldozer, dumpers, shovels, graders, roller dragline 64 Road pavers: types & uses 65 Modern construction equipments for roads. 66 Revision of important topics 67 Revision of important topics 68 Revision of important topics 69 Revision of important topics 70 Revision of important topics 71 Discussion of most probable questions(Short type) 72 Discussion of most probable questions(Short type) 73 Discussion of most probable questions(Long type)		
44 Cross drainage works 45 Surface drainage: Definition, methods 46 Location, spacing and typical details of side drains, side ditches for surface drainage 47 Sub-surface drainage: Definition, different methods 48 Details of drains in cutting embankment, typical cross section 49 Road Maintenance: Necessity, Different types of road failures 50 Causes & remedies of failures 51 Maintenance of bituminous road such as patch work and resurfacing 52 Maintenance of concrete roads – filling cracks, repairing joints 53 Maintenance of shoulders (berm), Maintenance of traffic control devices 54 Basic concept of traffic study 55 Traffic safety: traffic control devices 56 Traffic signs: Definition & types with diagram 57 Traffic signs: Definition & types with diagram 57 Traffic signs: Definition & types 58 Pavement markings: types 59 Construction equipments: Preliminary ideas, Different types of equipments 60 Hot mixing plant; preliminary ideas 61 Asphalt mixer and tar boilers 62 Preliminary ideas on Tipper, tractors (wheel and crawler) scraper 63 Preliminary ideas on bulldozer, dumpers, shovels, graders, roller dragline 64 Road pavers: types & uses 65 Modern construction equipments for roads. 66 Revision of important topics 67 Revision of important topics 68 Revision of important topics 69 Revision of important topics 70 Revision of important topics 71 Discussion of most probable questions(Short type) 72 Discussion of most probable questions(Short type) 73 Discussion of most probable questions(Long type)		Road Drainage: Necessity of road drainage work
45 Surface drainage: Definition, methods 46 Location, spacing and typical details of side drains, side ditches for surface drainage 47 Sub-surface drainage: Definition, different methods 48 Details of drains in cutting embankment, typical cross section 49 Road Maintenance: Necessity, Different types of road failures 50 Causes & remedies of failures 51 Maintenance of bituminous road such as patch work and resurfacing 52 Maintenance of concrete roads – filling cracks, repairing joints 53 Maintenance of shoulders (berm), Maintenance of traffic control devices 54 Basic concept of traffic study 55 Traffic safety: traffic control devices 56 Traffic signs: Definition & types with diagram 57 Traffic signals: Definition & types 58 Pavement markings: types 59 Construction equipments: Preliminary ideas, Different types of equipments 60 Hot mixing plant; preliminary ideas 61 Asphalt mixer and tar boilers 62 Preliminary ideas on Tipper, tractors (wheel and crawler) scraper 63 Preliminary ideas on bulldozer, dumpers, shovels, graders, roller dragline 64 Road pavers: types & uses 65 Modern construction equipments for roads. 66 Revision of important topics 67 Revision of important topics 68 Revision of important topics 70 Revision of important topics 71 Discussion of most probable questions(Short type) 72 Discussion of most probable questions(Short type) 73 Discussion of most probable questions(Long type)		
46 Location, spacing and typical details of side drains, side ditches for surface drainage: 47 Sub-surface drainage: Definition, different methods 48 Details of drains in cutting embankment, typical cross section 49 Road Maintenance: Necessity, Different types of road failures 50 Causes & remedies of failures 51 Maintenance of bituminous road such as patch work and resurfacing 52 Maintenance of concrete roads – filling cracks, repairing joints 53 Maintenance of shoulders (berm), Maintenance of traffic control devices 54 Basic concept of traffic study 55 Traffic signs: Definition & types with diagram 57 Traffic signs: Definition & types 58 Pavement markings: types 59 Construction equipments: Preliminary ideas, Different types of equipments 60 Hot mixing plant; preliminary ideas 61 Asphalt mixer and tar boilers 62 Preliminary ideas on Tipper, tractors (wheel and crawler) scraper 63 Preliminary ideas on bulldozer, dumpers, shovels, graders, roller dragline 64 Road pavers: types & uses 65 Modern construction equipments for roads. 66 Revision of important topics 67 Revision of important topics 68 Revision of important topics 70 Revision of important topics 71 Discussion of most probable questions(Short type) 72 Discussion of most probable questions(Short type) 73 Discussion of most probable questions(Long type)		Surface drainage: Definition, methods
47 Sub-surface drainage: Definition, different methods 48 Details of drains in cutting embankment, typical cross section 49 Road Maintenance: Necessity, Different types of road failures 50 Causes & remedies of failures 51 Maintenance of bituminous road such as patch work and resurfacing 52 Maintenance of concrete roads – filling cracks, repairing joints 53 Maintenance of shoulders (berm), Maintenance of traffic control devices 54 Basic concept of traffic study 55 Traffic safety: traffic control devices 56 Traffic signs: Definition & types with diagram 57 Traffic signs: Definition & types with diagram 57 Traffic signsls: Definition & types 58 Pavement markings: types 59 Construction equipments: Preliminary ideas, Different types of equipments 60 Hot mixing plant; preliminary ideas 61 Asphalt mixer and tar boilers 62 Preliminary ideas on Tipper, tractors (wheel and crawler) scraper 63 Preliminary ideas on bulldozer, dumpers, shovels, graders, roller dragline 64 Road pavers: types & uses 65 Modern construction equipments for roads. 66 Revision of important topics 67 Revision of important topics 68 Revision of important topics 70 Revision of important topics 71 Discussion of most probable questions(Short type) 72 Discussion of most probable questions(Long type) 73 Discussion of most probable questions(Long type)		Location, spacing and typical details of side drains, side ditches for surface drainage
48 Details of drains in cutting embankment, typical cross section 49 Road Maintenance: Necessity, Different types of road failures 50 Causes & remedies of failures 51 Maintenance of bituminous road such as patch work and resurfacing 52 Maintenance of concrete roads – filling cracks, repairing joints 53 Maintenance of shoulders (berm), Maintenance of traffic control devices 54 Basic concept of traffic study 55 Traffic safety: traffic control devices 56 Traffic signs: Definition & types with diagram 57 Traffic signals: Definition & types 58 Pavement markings: types 59 Construction equipments: Preliminary ideas, Different types of equipments 60 Hot mixing plant; preliminary ideas 61 Asphalt mixer and tar boilers 62 Preliminary ideas on Tipper, tractors (wheel and crawler) scraper 63 Preliminary ideas on bulldozer, dumpers, shovels, graders, roller dragline 64 Road pavers: types & uses 65 Modern construction equipments for roads. 66 Revision of important topics 67 Revision of important topics 68 Revision of important topics 69 Revision of important topics 70 Revision of important topics 71 Discussion of most probable questions(Short type) 72 Discussion of most probable questions(Long type) 73 Discussion of most probable questions(Long type)		Sub-surface drainage: Definition, different methods
49 Road Maintenance: Necessity, Different types of road failures 50 Causes & remedies of failures 51 Maintenance of bituminous road such as patch work and resurfacing 52 Maintenance of concrete roads – filling cracks, repairing joints 53 Maintenance of shoulders (berm), Maintenance of traffic control devices 54 Basic concept of traffic study 55 Traffic safety: traffic control devices 56 Traffic signs: Definition & types with diagram 57 Traffic signals: Definition & types 58 Pavement markings: types 59 Construction equipments: Preliminary ideas, Different types of equipments 60 Hot mixing plant,: preliminary ideas 61 Asphalt mixer and tar boilers 62 Preliminary ideas on Tipper, tractors (wheel and crawler) scraper 63 Preliminary ideas on bulldozer, dumpers, shovels, graders, roller dragline 64 Road pavers: types & uses 65 Modern construction equipments for roads. 66 Revision of important topics 67 Revision of important topics 68 Revision of important topics 69 Revision of important topics 70 Revision of important topics 71 Discussion of most probable questions(Short type) 72 Discussion of most probable questions(Short type) 73 Discussion of most probable questions(Long type)		Details of drains in cutting embankment, typical cross section
50 Causes & remedies of failures 51 Maintenance of bituminous road such as patch work and resurfacing 52 Maintenance of concrete roads – filling cracks, repairing joints 53 Maintenance of shoulders (berm), Maintenance of traffic control devices 54 Basic concept of traffic study 55 Traffic safety: traffic control devices 56 Traffic signs: Definition & types with diagram 57 Traffic signs: Definition & types 58 Pavement markings: types 59 Construction equipments: Preliminary ideas, Different types of equipments 60 Hot mixing plant,: preliminary ideas 61 Asphalt mixer and tar boilers 62 Preliminary ideas on Tipper, tractors (wheel and crawler) scraper 63 Preliminary ideas on bulldozer, dumpers, shovels, graders, roller dragline 64 Road pavers: types & uses 65 Modern construction equipments for roads. 66 Revision of important topics 67 Revision of important topics 68 Revision of important topics 69 Revision of important topics 70 Revision of most probable questions(Short type) 71 Discussion of most probable questions(Short type) 72 Discussion of most probable questions(Long type) 73 Discussion of most probable questions(Long type)		Poad Maintenance: Necessity, Different types of road failures
Maintenance of bituminous road such as patch work and resurfacing Maintenance of concrete roads – filling cracks, repairing joints Maintenance of shoulders (berm), Maintenance of traffic control devices Basic concept of traffic study Traffic safety: traffic control devices Traffic signs: Definition & types with diagram Traffic signals: Definition & types Pavement markings: types Construction equipments: Preliminary ideas, Different types of equipments Hot mixing plant;: preliminary ideas Asphalt mixer and tar boilers Preliminary ideas on Tipper, tractors (wheel and crawler) scraper Preliminary ideas on bulldozer, dumpers, shovels, graders, roller dragline Road pavers: types & uses Modern construction equipments for roads. Revision of important topics Revision of most probable questions(Short type) Discussion of most probable questions(Long type) Jiscussion of most probable questions(Long type)		Causes & remedies of failures
Maintenance of concrete roads – filling cracks, repairing joints Maintenance of shoulders (berm), Maintenance of traffic control devices Basic concept of traffic study Traffic safety: traffic control devices Traffic signs: Definition & types with diagram Traffic signals: Definition & types Pavement markings: types Construction equipments: Preliminary ideas, Different types of equipments Hot mixing plant,: preliminary ideas Hot mixing plant,: preliminary ideas Preliminary ideas on Tipper, tractors (wheel and crawler) scraper Preliminary ideas on bulldozer, dumpers, shovels, graders, roller dragline Road pavers: types & uses Modern construction equipments for roads. Revision of important topics Revision of most probable questions(Short type) Discussion of most probable questions(Long type) Discussion of most probable questions(Long type)		Maintenance of bituminous road such as patch work and resurfacing
S3 Maintenance of shoulders (berm), Maintenance of trame control devices 54 Basic concept of traffic study 55 Traffic safety: traffic control devices 56 Traffic signs: Definition & types with diagram 57 Traffic signs: Definition & types 58 Pavement markings: types 59 Construction equipments: Preliminary ideas, Different types of equipments 60 Hot mixing plant,: preliminary ideas 61 Asphalt mixer and tar boilers 62 Preliminary ideas on Tipper, tractors (wheel and crawler) scraper 63 Preliminary ideas on bulldozer, dumpers, shovels, graders, roller dragline 64 Road pavers: types & uses 65 Modern construction equipments for roads. 66 Revision of important topics 67 Revision of important topics 68 Revision of important topics 69 Revision of important topics 70 Revision of most probable questions(Short type) 71 Discussion of most probable questions(Short type) 72 Discussion of most probable questions(Long type)		Maintenance of concrete roads — filling cracks, repairing joints
54 Basic concept of traffic study 55 Traffic safety: traffic control devices 56 Traffic signs: Definition & types with diagram 57 Traffic signals: Definition & types 58 Pavement markings: types 59 Construction equipments: Preliminary ideas, Different types of equipments 60 Hot mixing plant,: preliminary ideas 61 Asphalt mixer and tar boilers 62 Preliminary ideas on Tipper, tractors (wheel and crawler) scraper 63 Preliminary ideas on bulldozer, dumpers, shovels, graders, roller dragline 64 Road pavers: types & uses 65 Modern construction equipments for roads. 66 Revision of important topics 67 Revision of important topics 68 Revision of important topics 69 Revision of important topics 70 Revision of important topics 71 Discussion of most probable questions(Short type) 72 Discussion of most probable questions(Long type) 73 Discussion of most probable questions(Long type)		Maintenance of shoulders (berm), Maintenance of traffic control devices
55 Traffic safety: traffic control devices 56 Traffic signs: Definition & types with diagram 57 Traffic signals: Definition & types 58 Pavement markings: types 59 Construction equipments: Preliminary ideas, Different types of equipments 60 Hot mixing plant,: preliminary ideas 61 Asphalt mixer and tar boilers 62 Preliminary ideas on Tipper, tractors (wheel and crawler) scraper 63 Preliminary ideas on bulldozer, dumpers, shovels, graders, roller dragline 64 Road pavers: types & uses 65 Modern construction equipments for roads. 66 Revision of important topics 67 Revision of important topics 68 Revision of important topics 69 Revision of important topics 70 Revision of important topics 71 Discussion of most probable questions(Short type) 72 Discussion of most probable questions(Long type) 73 Discussion of most probable questions(Long type)		Basic concept of traffic study
Traffic signs: Definition & types Traffic signals: Definition & types Pavement markings: types Construction equipments: Preliminary ideas, Different types of equipments Hot mixing plant,: preliminary ideas Asphalt mixer and tar boilers Preliminary ideas on Tipper, tractors (wheel and crawler) scraper Preliminary ideas on bulldozer, dumpers, shovels, graders, roller dragline Road pavers: types & uses Modern construction equipments for roads. Revision of important topics Revision of important topics Revision of important topics Revision of important topics Preliminary topics Revision of important topics Servision of most probable questions(Short type) Siccussion of most probable questions(Cong type) Discussion of most probable questions(Long type)		Traffic safety: traffic control devices
57 Traffic signals: Definition & types 58 Pavement markings: types 59 Construction equipments: Preliminary ideas, Different types of equipments 60 Hot mixing plant,: preliminary ideas 61 Asphalt mixer and tar boilers 62 Preliminary ideas on Tipper, tractors (wheel and crawler) scraper 63 Preliminary ideas on bulldozer, dumpers, shovels, graders, roller dragline 64 Road pavers: types & uses 65 Modern construction equipments for roads. 66 Revision of important topics 67 Revision of important topics 68 Revision of important topics 69 Revision of important topics 70 Revision of important topics 71 Discussion of most probable questions(Short type) 72 Discussion of most probable questions(Long type) 73 Discussion of most probable questions(Long type)		Traffic signs: Definition & types with diagram
58 Pavement markings: types 59 Construction equipments: Preliminary ideas, Different types of equipments 60 Hot mixing plant,: preliminary ideas 61 Asphalt mixer and tar boilers 62 Preliminary ideas on Tipper, tractors (wheel and crawler) scraper 63 Preliminary ideas on bulldozer, dumpers, shovels, graders, roller dragline 64 Road pavers: types & uses 65 Modern construction equipments for roads. 66 Revision of important topics 67 Revision of important topics 68 Revision of important topics 69 Revision of important topics 70 Revision of important topics 71 Discussion of most probable questions(Short type) 72 Discussion of most probable questions(Long type) 73 Discussion of most probable questions(Long type)		Traffic signals: Definition & types
59 Construction equipments: Preliminary ideas, Different types of equipments 60 Hot mixing plant,: preliminary ideas 61 Asphalt mixer and tar boilers 62 Preliminary ideas on Tipper, tractors (wheel and crawler) scraper 63 Preliminary ideas on bulldozer, dumpers, shovels, graders, roller dragline 64 Road pavers: types & uses 65 Modern construction equipments for roads. 66 Revision of important topics 67 Revision of important topics 68 Revision of important topics 69 Revision of important topics 70 Revision of important topics 71 Discussion of most probable questions(Short type) 72 Discussion of most probable questions(Cong type) 73 Discussion of most probable questions(Long type)		P west markings; types
60 Hot mixing plant,: preliminary ideas 61 Asphalt mixer and tar boilers 62 Preliminary ideas on Tipper, tractors (wheel and crawler) scraper 63 Preliminary ideas on bulldozer, dumpers, shovels, graders, roller dragline 64 Road pavers: types & uses 65 Modern construction equipments for roads. 66 Revision of important topics 67 Revision of important topics 68 Revision of important topics 69 Revision of important topics 70 Revision of important topics 71 Discussion of most probable questions(Short type) 72 Discussion of most probable questions(Short type) 73 Discussion of most probable questions(Long type) 74 Discussion of most probable questions(Long type)		Construction equipments: Preliminary ideas, Different types of equipments
Preliminary ideas on Tipper, tractors (wheel and crawler) scraper Preliminary ideas on bulldozer, dumpers, shovels, graders, roller dragline Road pavers: types & uses Modern construction equipments for roads. Revision of important topics Discussion of most probable questions(Short type) Discussion of most probable questions(Long type) Discussion of most probable questions(Long type)		Hot mixing plant,: preliminary ideas
Preliminary ideas on bulldozer, dumpers, snovels, graders, roller dragilite Road pavers: types & uses Modern construction equipments for roads. Revision of important topics Discussion of most probable questions(Short type) Discussion of most probable questions(Short type) Discussion of most probable questions(Long type) Discussion of most probable questions(Long type)	61	Asphalt mixer and tar boilers
64 Road pavers: types & uses 65 Modern construction equipments for roads. 66 Revision of important topics 67 Revision of important topics 68 Revision of important topics 69 Revision of important topics 70 Revision of important topics 71 Discussion of most probable questions(Short type) 72 Discussion of most probable questions(Short type) 73 Discussion of most probable questions(Long type) 74 Discussion of most probable questions(Long type)	62	Preliminary ideas on Tipper, tractors (wheel and crawler) scraper
65 Modern construction equipments for roads. 66 Revision of important topics 67 Revision of important topics 68 Revision of important topics 69 Revision of important topics 70 Revision of important topics 71 Discussion of most probable questions(Short type) 72 Discussion of most probable questions(Short type) 73 Discussion of most probable questions(Long type) 74 Discussion of most probable questions(Long type)	63	Preliminary ideas on bulldozer, dumpers, snovels, graders, roller drag
66 Revision of important topics 67 Revision of important topics 68 Revision of important topics 69 Revision of important topics 70 Revision of important topics 71 Discussion of most probable questions(Short type) 72 Discussion of most probable questions(Short type) 73 Discussion of most probable questions(Long type) 74 Discussion of most probable questions(Long type)		Road pavers: types & uses
67 Revision of important topics 68 Revision of important topics 69 Revision of important topics 70 Revision of important topics 71 Discussion of most probable questions(Short type) 72 Discussion of most probable questions(Short type) 73 Discussion of most probable questions(Long type) 74 Discussion of most probable questions(Long type)		Modern construction equipments for roads.
68 Revision of important topics 69 Revision of important topics 70 Revision of important topics 71 Discussion of most probable questions(Short type) 72 Discussion of most probable questions(Short type) 73 Discussion of most probable questions(Long type) 74 Discussion of most probable questions(Long type)		Revision of important topics
69 Revision of important topics 70 Revision of important topics 71 Discussion of most probable questions(Short type) 72 Discussion of most probable questions(Short type) 73 Discussion of most probable questions(Long type) 74 Discussion of most probable questions(Long type)		
70 Revision of important topics 71 Discussion of most probable questions(Short type) 72 Discussion of most probable questions(Short type) 73 Discussion of most probable questions(Long type) 74 Discussion of most probable questions(Long type)		Revision of important topics
71 Discussion of most probable questions(Short type) 72 Discussion of most probable questions(Short type) 73 Discussion of most probable questions(Long type) 74 Discussion of most probable questions(Long type)		Revision of important topics
72 Discussion of most probable questions(Short type) 73 Discussion of most probable questions(Long type) 74 Discussion of most probable questions(Long type)		Discussion of most probable questions(Short type)
73 Discussion of most probable questions(Long type) 74 Discussion of most probable questions(Long type)		Discussion of most probable questions(Short type)
74 Discussion of most probable questions(Long type)		Discussion of most probable questions(Long type)
75 Discussion of most probable questions(Long type)		Discussion of most probable questions(Long type)
		Discussion of most probable questions(Long type)

Signature of Faculty

Signature of HOD