

Road Traffic Engineering (315318)

MSBTE Diploma · K-Scheme · Civil Engineering Sem 5 — Important Questions (unit-wise)

Based on MSBTE papers W-2025 and S-2026 available on msbte.ac.in (the only two K-scheme papers of this subject so far) and the K-scheme syllabus. Practice guidance only — **not a prediction of the exam**. With only two papers, **High** = asked in both papers, **Medium** = asked in one paper, **Low** = in the syllabus but not asked yet.

Paper pattern (both papers): 3 hours, 70 marks, six questions.

Q.1	Q.2	Q.3	Q.4	Q.5	Q.6
any 5 of $7 \times 2 = 10$	any 3 of $4 \times 4 = 12$	any 3 of $4 \times 4 = 12$	any 3 of $5 \times 4 = 12$	any 2 of $3 \times 6 = 12$	any 2 of $3 \times 6 = 12$

Unit	1	2	3	4	5
Syllabus marks	8	18	18	12	14

Note: traffic signals, rotaries, traffic signs and road markings are **not** in the K-scheme syllabus of this course (they are in Highway Engineering), so they are not listed here.

Unit I — Fundamentals of Traffic Engineering (8 marks)

#	Question / topic	Marks	Asked in	Probability
1	Traffic engineering — definition, objectives and scope • State any four objectives of traffic engineering • Define traffic engineering and scope of traffic engineering	2, 4	W-25 Q1 a (2 M) S-26 Q2 a (4 M)	High
2	Essential (physical) road characteristics considered in traffic engineering • List essential road characteristics to be considered in traffic engineering • Explain the essential physical road characteristics to be considered	2, 4	W-25 Q1 b (2 M) S-26 Q2 c (4 M)	High
3	Factors affecting reaction time of driver • Explain the factors affecting the reaction time for driver • State the factors affecting reaction time	4	W-25 Q3 b (4 M) S-26 Q2 b (4 M)	High
4	PIEV theory with diagram • Explain with diagram PIEV theory	4	W-25 Q3 a (4 M)	Medium
5	Road user characteristics — physical, mental, emotional factors	—	—	Low
6	Vehicular characteristics — width, length, height, weight, speed, brake efficiency	—	—	Low

Unit II — Traffic Surveys and Intelligent Transport System (18 marks)

#	Question / topic	Marks	Asked in	Probability
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1	Traffic volume — definition, purposes / uses of volume study • Define traffic volume and state its purposes • Define traffic volume study • Explain the purpose of traffic volume study of a road section	2, 4	W-25 Q3 d (4 M) S-26 Q1 a (2 M) S-26 Q2 d (4 M)	High
2	Origin and destination (O-D) study — necessity and methods • State the necessity of O-D studies • Explain any one method of O-D studies • Enlist the methods of O-D study	2, 4	W-25 Q1 c (2 M) W-25 Q2 b (4 M) S-26 Q1 b (2 M)	High
3	Intelligent Transportation System (ITS) — definition, applications, benefits • Define ITS • Explain the application of ITS in road traffic engineering • Describe the benefits of ITS in road survey	2, 4	W-25 Q1 d (2 M) W-25 Q4 a (4 M) S-26 Q4 a (4 M)	High
4	Speed studies / spot speed study (incl. numerical: cumulative curve, 85th percentile) • Describe speed studies and spot studies • Spot speed data — cumulative frequency table, curve, 85th percentile speed	4, 6	W-25 Q3 c (4 M) S-26 Q6 a (6 M)	High
5	Difficulties in urban traffic conditions and measures • Explain the difficulties in urban traffic conditions and how it can be prevented	6	W-25 Q5 a (6 M)	Medium
6	Traffic volume data representation — compare methods, suggest for congested intersection • Compare methods of traffic volume data representation; suggest method for congested urban intersection	6	S-26 Q5 a (6 M)	Medium
7	Journey time and delay studies • Explain time and delay studies in traffic	4	W-25 Q2 a (4 M)	Medium
8	Traffic volume count methods (manual / automatic) and PCU conversion	—	—	Low
9	Moving observer method (journey speed and flow — numerical)	—	—	Low
10	Spot speed measurement methods (enoscope, radar, pressure tubes)	—	—	Low

Unit III — Parking Studies (18 marks)

#	Question / topic	Marks	Asked in	Probability
1	On-street parking facilities and layout (sketch) • Describe on-street parking facilities and layout • Draw neat sketch of on-street parking system for a busy commercial street	6	W-25 Q6 a (6 M) S-26 Q5 b (6 M)	High
2	Off-street parking facilities / methods • Explain any one method of off-street parking facilities • Demonstrate how off-street parking methods help to reduce on-road congestion	4, 6	W-25 Q2 c (4 M) S-26 Q5 c (6 M)	High

3	Ill effects of parking / unregulated parking • Describe the ill effects of parking • Explain the ill effects of unregulated parking in urban areas	4	W-25 Q2 d (4 M) S-26 Q4 b (4 M)	High
4	Parking space requirement as per IRC / IS standards • State parking space requirement as per IS for offices and hospitals • Explain the parking space requirement as per IRC standards	2, 4	W-25 Q1 g (2 M) S-26 Q4 c (4 M)	High
5	Parking survey — definition, common terms, types • Define a parking survey • Enlist the common terms used in parking survey • State the different types of parking survey (any two)	2	S-26 Q1 c (2 M) S-26 Q1 d (2 M) S-26 Q1 e (2 M)	Medium
6	Need for parking regulations • Explain need for parking regulations	6	W-25 Q5 b (6 M)	Medium
7	Parking survey numericals — accumulation, parking load, turnover, parking index	—	—	Low
8	Types of parking regulation	—	—	Low
9	Angle parking — kerb length and width occupied per car	—	—	Low

Unit IV — Street Lighting and Arboriculture (12 marks)

#	Question / topic	Marks	Asked in	Probability
1	Factors affecting selection of type of roadside trees • Describe the factors affecting selection of types of roadside trees • Explain the factors affecting selection of type of trees	4, 6	W-25 Q5 c (6 M) S-26 Q3 a (4 M)	High
2	Street lighting — definition and necessity • Define street light and explain its necessity • Define street lighting and state necessity of street lighting	4	W-25 Q4 d (4 M) S-26 Q3 c (4 M)	High
3	Factors affecting visibility at night • Describe the factors affecting the visibility at night • Describe the factors affecting visibility of road at night time	4	W-25 Q4 c (4 M) S-26 Q3 b (4 M)	High
4	Arboriculture — definition and objectives • Define arboriculture and state its objectives • Define term arboriculture	2, 4	W-25 Q4 e (4 M) S-26 Q1 f (2 M)	High
5	Foot-candle and luminaire (terms) • Explain terms foot candle and luminaire	4	W-25 Q4 b (4 M)	Medium
6	Tree care and maintenance techniques • Describe common techniques used for tree care and maintenance	4	S-26 Q3 d (4 M)	Medium
7	Sources of street light (lamps) and arrangement of street lamps	—	—	Low
8	Lumen; factors affecting utilisation and maintenance of street lights	—	—	Low
9	Protection of roadside trees (tree guards)	—	—	Low

Unit V — Road Accident Studies (14 marks)

#	Question / topic	Marks	Asked in	Probability
1	Condition diagram and collision diagram • Explain condition diagram and collision diagram • Explain condition diagram and collision diagram	6	W-25 Q6 c (6 M) S-26 Q6 c (6 M)	High
2	Legislation, law enforcement and education in road accident studies • Discuss legislation and law enforcement, education in accident studies • Explain the legislation and law enforcement, education in accident studies	6	W-25 Q6 b (6 M) S-26 Q6 b (6 M)	High
3	Causes of road accidents • State any four causes of road accidents • Explain the causes of road accidents (any four)	2, 4	W-25 Q1 e (2 M) S-26 Q4 e (4 M)	High
4	Preventive measures for avoiding road accidents • Suggest preventive measures for avoiding road accidents	4	S-26 Q4 d (4 M)	Medium
5	Types of collision — head-on collision diagram • Draw diagram for head-on collision	2	W-25 Q1 f (2 M)	Medium
6	Key elements involved in a road accident • List out the key elements involved in a road accident	2	S-26 Q1 g (2 M)	Medium
7	Definition and types of road accidents — collision and non-collision	—	—	Low
8	Considerations for pedestrian safety	—	—	Low

Note: This is a **study guide prepared by Ananda Technologies** only for practice and exam preparation, based on the pattern of previous MSBTE question papers and the K-scheme syllabus. It is **not an official MSBTE paper**, and it does **not** mean that these questions will come in the exam. Answers follow standard textbook points; marks shown are indicative. Free for students — anandatechnologies.in