

Road Traffic Engineering (315318)

MSBTE Diploma · K-Scheme · Model Question Paper — Set A

Time: 3 Hours**Max. Marks: 70****Instructions:**

1. All questions are compulsory.
2. Answer each next main question on a new page.
3. Illustrate your answers with neat sketches wherever necessary.
4. Figures to the right indicate full marks.
5. Assume suitable data, if necessary.
6. Use of non-programmable electronic pocket calculator is permissible.
7. Mobile phone, pager and any other electronic communication devices are not permissible in the examination hall.

Q.1 Attempt any FIVE of the following:**10**

- a) Define traffic engineering.
- b) State any four factors affecting the reaction time of a driver.
- c) Define traffic volume. State its units.
- d) List any four methods of origin and destination (O-D) survey.
- e) Define: i) Parking accumulation ii) Parking turnover.
- f) Define: i) Foot-candle ii) Lumen.
- g) State any four causes of road accidents.

Q.2 Attempt any THREE of the following:**12**

- a) Explain PIEV theory with a neat sketch.
- b) Explain the purposes of conducting a traffic volume study.
- c) State the necessity of O-D study and explain the road-side interview method.
- d) Describe the ill effects of on-street parking.

Q.3 Attempt any THREE of the following:**12**

- a) Describe the spot speed study. State the use of 85th, 98th and 15th percentile speeds.
- b) Explain the applications of Intelligent Transportation System (ITS) in road traffic management.
- c) State the parking space requirements as per IRC standards for business offices, hospitals, cinema halls and restaurants.
- d) Define street lighting and state its necessity.

Q.4 Attempt any THREE of the following:**12**

- a) Explain the essential road characteristics to be considered in traffic engineering.

- b) Describe the factors affecting visibility at night.
- c) Define arboriculture and state its objectives.
- d) Explain the need for parking regulations. State any four types of parking regulation.
- e) Draw neat sketches of head-on, rear-end, right-angle and side-swipe collisions.

Q.5 Attempt any TWO of the following:

12

- a) Describe on-street parking facilities. Draw layouts of parallel, 45° angle and 90° parking and state the kerb length required per car.
- b) Explain any three methods of off-street parking with neat sketches.
- c) Describe the factors affecting the selection of type of roadside trees.

Q.6 Attempt any TWO of the following:

12

- a) The following spot speed data were collected on a highway. Prepare the cumulative frequency table, plot the cumulative speed distribution curve and find (i) the 85th percentile speed (ii) the 98th percentile speed (iii) the 15th percentile speed and (iv) the mean spot speed.

Speed range (km/h)	20–30	30–40	40–50	50–60	60–70	70–80	80–90
No. of vehicles	7	16	38	52	30	13	4

- b) Explain the following with respect to road accident studies with neat sketches: i) Collision diagram ii) Condition diagram.
- c) Explain the role of legislation, law enforcement and education in reducing road accidents.

Note: This is a **model question paper 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