

**Total No. of Pages : 01**

**Total No. of Questions : 08**

**M.Tech.(Civil Engg.) (2016 Batch) (Sem.-2)**

# ADVANCED TRAFFIC ENGINEERING

**Subject Code : MTCE-208**

**Paper ID : [74301]**

**Time : 3 Hrs.**

**Max. Marks : 100**

**INSTRUCTIONS TO CANDIDATES :**

1. Attempt any FIVE out of EIGHT questions.
2. Each question carries TWENTY marks.

- Q1. What are the different vehicular characteristics which affect the road design? Briefly discuss.
- Q2. a) Explain the role of pavement surface characteristics in highway geometric design. State factors affecting friction between pavements and types of vehicles.  
b) Explain camber. What are the objects of camber? Discuss factors on which amount of camber to be provided depends. Specify recommended range of camber for different types of pavement surfaces.
- Q3. a) Derive an expression for calculating Overtaking Sight Distance (OSD) on a highway.  
b) Calculate safe OSD for a design speed of 96 km/h. Assume all other data suitable.
- Q4. a) Enumerate steps for practical design for superelevation.  
b) Derive superelevation required at a horizontal curve of radius 300 m for speed of 60kmph. Assume suitable data.
- Q5. a) Derive an expression for finding extra widening required on a horizontal curve.  
b) Calculate extra width of pavement required on a horizontal curve of radius 700m on a 2 lane highway. The design speed being 80 kmph. Assume wheel base,  $l=6$  m.
- Q6. Explain briefly various design factors that are to be considered in rotary intersection design.
- Q7. Explain grade separated intersection alongwith advantages and limitations.
- Q8. With neat sketches show various types of traffic signs, classifying them in proper groups.