AQ – 2811

Second Semester M. E. (Civil) (Transportation Engg. and Management) Examination

GEOMETRIC DESIGN OF TRANSPORTATION FACILITIES

2 SFTR · 4

P. Pages : 2

Time : Three Hours] [Max. Marks : 80

Note : (1) All question carry equal marks.
(2) Answer any **Five** questions.
(3) Assume suitable data wherever necessary.
(4) Illustrate your answer wherever necessary with the help of neat sketches.
(5) Use pen of Blue/Black ink/refill only for writing the answer book.

1. (a) Explain in brief-the factors on which geometric design of highway depends. 8

   (b) Derive an expression for finding the stopping sight distance at level and at grades. 8

2. (a) Calculate the safe overtaking sight distance for a design speed of 96 kmph. Assume all other suitable data. 8

   (b) A NH passing through a flat terrain has a horizontal curve of radius equal to the ruling minimum radius. If the design speed is 100 kmph. Calculate superelevation and expanding . Assume necessary data. 8

3. (a) What are the geometric standards for expressway ? Draw a typical cross-section of an expressway. 8

   (b) Explain summit and valley curves and the various cases when these are formed while two different gradients meets. 8

4. (a) Explain the terms-building line and control line. Give the recommended right of way width for various classes of roods in india. 8

   (b) What are the factors governing skid resistance of pavement ? What are the practices for improving the skid resistances of surface. 8

5. (a) Draw the typical speed flow curve and indicate the level of service. 8

(b) Draw the neat sketch of Rotary intersection showing all the design elements. 8

6. (a) What are the relative advantages and disadvantages of over-pass and under-pass. 8

(b) Describe with neat sketch full cloverleaf intersection. 8