

B.E.(with Credits)-Regular-Semester 2012-Civil Engineering Sem V
CE502 - Transportation Engineering-I

P. Pages : 2

Time : Three Hours



GUG/W/16/3683

Max. Marks : 80

- Notes :
1. All questions carry equal marks.
 2. All questions are compulsory.
 3. Due credit will be given to neatness and adequate dimensions.
 4. Assume suitable data wherever necessary.
 5. Use of nonprogrammable calculator is allowed.

1. a) How the "Road System" is classified as per "third road development plan"? Discuss in brief. 8
- b) What are the various surveys to be carried out before planning a highway system for a given area? Explain briefly. 8

OR

2. a) Discuss the Nagpur Road plan and point out in what respects it differs from 2nd twenty year road plan. 8
- b) Discuss briefly "3E's of traffic Engineering". 8
3. a) Enumerate the types and purposes of kerbs. 8
- b) Design the rate of superelevation for a design speed of 80 kmph with 200 m as the radius of curve. 8

OR

4. a) Point out the difference between "Flexible pavement and Rigid pavement". 7
- b) Derive the expression of "overtaking sight distance". 9
5. a) Enumerate the various tests conducted on "Tar and Bitumen"? Explain any one in detail. 8
- b) What is group Index? How it is determined. 8

OR

6. a) Discuss the various steps involved for the construction of WBM layer of pavements. 8
- b) Discuss in brief "CBR test" with load-penetration curve. 8
7. a) Derive from the first principles an expression for "Economic span" of a bridge. What are the assumption made therein? Justify the assumption. 8

- b) How the bridges are classified and numbered. 8

OR

8. a) A bridge is proposed to be constructed across an alluvial stream carrying a discharge of $300 \text{ m}^3/\text{sec}$. Assume the value of silt factor = 1.1, determine the maximum scour depth when bridge consist of 8
- i) two spans of 35 m each.
ii) three spans of 30 m each.
- b) Discuss the points to be considered for selection of a bridge site. 8
9. a) Explain with the neat sketches the type of bridge bearings. 8
- b) Discuss the different types of R.C.C. bridges in brief. 8

OR

10. a) Distinguish clearly with neat sketches between suspension and cable stayed bridge. What are the factors affecting their choice. 8
- b) What is mean by "bridge superstructure"? What are its various types? Discuss in brief. 8
