

T.E. Civil VI CBS GS

Trans. Engrg - II

(3 Hours)

(37)

14.12.16

Q.P. Code : 577604

(5)

[Total Marks : 80

- N.B. :** (1) Question No.1 is compulsory.
(2) Attempt any three out of remaining.
(3) Assume any suitable data wherever required.

1. (a) List any four obligatory points that influence highway alignment? 5
- (b) What is height of Afflux? Explain in detail afflux height. 5
- (c) Write briefly how maintenance of cement concrete pavements is carried out. 5
- (d) What is meant by ESWL? Explain the significance. 5
2. (a) Design the pavement for construction of a new bypass of Two lane carriage way having Initial traffic in the year of completion of construction = 400 CVPD (sum of both directions) and Traffic growth rate = 7.5% for Design life= 15 years the Vehicle damage factor based on axle load survey = 2.5 standard axle per commercial vehicle and Design CBR of sub grade soil = 4%. Use figure 1. 10

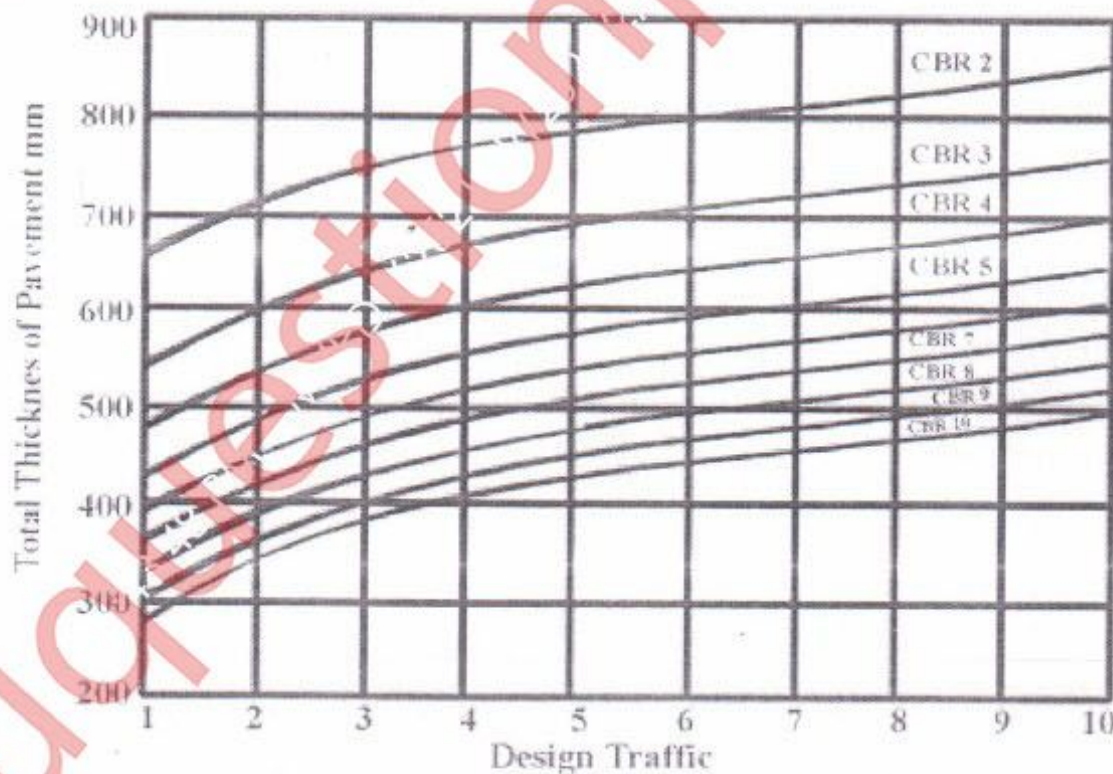


Fig. 1 Pavement Thickness Design Chart for Traffic 1-10 msa

- (b) What do you mean by structural and functional evaluation of pavement? 10
Enlist the equipment's used for the same.

TURN OVER

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3. (a) Calculate the stopping sight distance on a highway at a descending gradient of 2% for a design speed of 80 kmph. Assume other data if required as per IRC Standards. **15**
- (i) Discuss the factors to be considered in deciding the sight distance at intersections.
- (b) Enumerate the step for preparation of sub grade during highway construction. **5**
4. (a) Indicate how the traffic volume data are presented and the results used in traffic engineering? **10**
- (b) (i) A Number of Deflection reading were taken on pavement. The mean and standard deviation were 1.50 and 0.20 mm respectively. The allowable deflection is 1.00 mm. Determine overlay thickness. **10**
- (ii) What is meant by flexible overlay over rigid pavement?
5. (a) What are the desirable properties of aggregate? Explain any one with permissible limits. **10**
- (b) Define time mean speed and space mean speed. State its applications. Find the value of standard deviation if time mean speed is 5.22 m/sec. and space mean speed is 4.19 m/sec. **10**
6. Write short note on : **20**
- (a) Significance of drainage system.
- (b) Regulatory and inforatory signs.
- (c) Temperature stresses in Rigid pavement.
- (d) Peripheral parking and its advantages.
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