

B.Tech. CIVIL ENGINEERING (BTCLEVI)

Term-End Examination

June, 2018

00413

BICE-020 : TRANSPORTATION ENGINEERING – II

Time : 3 hours

Maximum Marks : 70

Note : Attempt any **five** questions. Use of scientific calculator is allowed.

1. (a) Discuss the need and basic components of soil surveys for design and construction of a road. 7
- (b) Discuss the system of highway classification followed in India. 7
2. (a) Describe in brief methods of raising highway finances in India. 7
- (b) What do you understand by sight distance ? How does it affect the design and construction of a highway ? 7

3. (a) Draw neat sketches of a highway cross-section 'in cutting' and 'in embankment' to show highway cross-section elements. 7
- (b) Describe various criteria for determining the minimum length of a valley curve. 7
4. (a) Calculate the stopping sight distance for a one-way traffic road for the following data : 7
 Design speed = 75 kmph
 Design coefficient of friction = 0.4
 Gradient (descending) = 2%
 Total reaction time of driver = 2.5 sec.
- (b) A descending gradient of 1 in 30 meets an ascending gradient of 1 in 40 to form a valley curve. Find the length of the valley curve if the stopping sight distance is 120 m. 7
5. Describe the CBR method of flexible pavement design. Discuss the drawbacks of this method. 14
6. (a) What is 'origin and destination' survey ? What is its purpose ? Enumerate different methods of origin and destination survey. 7
- (b) Discuss applications of GIS in traffic engineering. 7

7. Write short notes on any *two* of the following : 2×7=14

- (a) Intelligent Transport System
 - (b) Traffic Signs and Signals
 - (c) Drainage of Roads
 - (d) Causes of Road Accidents
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