

8. What is critical crash rate ? What are various methods of identification of a black spot on a highway ? Discuss the methods of designing and evaluating effectiveness of a safety measure. 15

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M. Tech. EXAMINATION, Dec. 2017

(Third Semester)

(Main & Re-appear)

CE(HSE)

CEH-657

ACCIDENT ANALYSIS

Time : 3 Hours]

[Maximum Marks : 75

Before answering the question-paper candidates should ensure that they have been supplied to correct and complete question-paper. No complaint, in this regard, will be entertained after the examination.

Note : Attempt *Five* questions in all, selecting at least *one* question from each Unit. All questions carry equal marks.

Unit I

1. (a) What are different causes of traffic accidents ? Discuss briefly. **10**
(b) Show the conflict points at a T-intersection with both roads two way and suggest methods of reducing them. **5**
2. (a) Explain briefly the various aspects to be investigated during accident studies. What are the uses of these studies ? **10**
(b) Describe various sources of accident data in India. Briefly explain various accident recording forms prescribed by IRC. **5**

Unit II

3. Two trucks A and B of equal weight approaching from right angles apply brakes and skid through distances 30 m and 20 m before collision and 20 m and 35 m respectively after collision. If the directions of skidding vehicles after collision are 45° and 135° respectively from their original direction of travel, calculate their approach speed assuming $f = 0.7$ and 80% braking efficiency. **15**

4. Describe various driver related tests to investigate causes of accident. Explain the importance of collision diagram in safety analysis of a black spot site. **15**

Unit III

5. (a) Briefly describe various heads for calculation of accident costs. **5**
(b) Discuss merits and demerits of various methods of calculation of accident costs. **10**
6. (a) Explain factors affecting the cost. Describe the basis for selection of an appropriate method for calculation of accident cost. **10**
(b) Discuss Indian scenario on average costs of various types of accidents. **5**

Unit IV

7. Discuss various issues and challenges in predictive modelling of road accidents in India. Describe Poisson model and its limitations. **15**