## Unit IV

7. (a) Describe the problems and challenges in predictive modeling of accidents in India.

   (b) Define accident frequency and accident rate. Explain various methods of comparing road safety on various roads/intersections. **5+10**

8. (a) Describe standard model form used in predictive modeling of road accidents. Why linear models are not suitable in predictive modeling of road accidents. Describe advantages of negative binomial model over linear or Poisson regession models in prediction of road safety.

   (b) Describe before and after method of evaluation of effectiveness of an accident reducing measure. **10+5**

# CC-726

## M. Tech. EXAMINATION, May 2018

(Third Semester)

(Re-appear Only)

CE(HSE)

CEH657

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) Discuss the problems faced by a road safety Engineer in India. **5**

(b) Explain the methods of accident investigation. What are the main factors to be investigated about an accident ? **10**

**2.** (a) What are the different causes of traffic accidents ? Discuss. **10**

(b) Explain form A 1 as per IRC for recording of accident data. **5**

## Unit II

**3.** Discuss the assumptions involved in analysis of the speed of vehicles involved in the accident. A vehicle skids through a distance equal to 50 m before colliding with another parked vehicle, the weight of which is 85 per cent of the former. After collision both the vehicle skid through 15.5 m before stopping. Compute the initial speed of moving vehicle, assuming average friction coefficient as 0.65. **15**

**4.** (a) It is observed that on an average a vehicle driver drives 58 km per day. The probability of having an accident is 100 per 200 million vehicle km. What is the probability of a driver having at least three accidents during his driving career extended of 25 years ? **5**

(b) Differentiate between collision and condition diagram with neat sketches. **10**

## Unit III

**5.** (a) Describe various methods of calculation of accident costs. Which one is best suited for Indian conditions and why ? **10**

(b) Prepare a summary of accident cost involved in serious injury accident. **5**

**6.** (a) Explain various components of a fatal accident's cost. **5**

(b) What type of data is needed to calculate cost of a fatal accident ? Explain with the help of a working example. **10**