No. of Printed Pages : 3

BICE-020

B.Tech. CIVIL ENGINEERING (BTCLEVI)

Term-End Examination

00315 **December, 2014**

BICE-020 : TRANSPORTATION ENGINEERING – II

Time : 3 hours *Maximum Marks : 70*

Note : *Attempt any **seven** questions. All questions carry equal marks. Use of scientific calculator is permitted.*

1. (a) What are the basic requirements of Highway alignment ? *5*

(b) Compare the development of Indian roads between pre-Independence and post-Independence era. *5*

2. What are the requirements of good intersection ? Compare the functionalities of Rotaries and Signals for controlling the traffic at road junctions. *3+7=10*

3. (a) What is the purpose of providing superelevation ?

(b) Estimate the superelevation required at a horizontal curve of radius 300 m for a design speed of 60 kmph. Assume coefficient of lateral friction as 0·15. *3+7=10*

4. (a) Define sight distance.

   (b) Calculate the safe stopping sight distance for design speed of 60 kmph for two way traffic on a two lane road. Assume coefficient of friction f = 0·37. Reaction time of driver = 3 sec. *3+7=10*

5. (a) Define and elaborate the design factors of flexible pavement and rigid pavement. *5*

   (b) What is the purpose of surface dressing over WBM road ? *5*

6. (a) Explain in brief the characteristics of surface and sub-surface of road drainage with neat sketches.

   (b) Discuss the factors to be considered for designing the road drainage. *5+5=10*

7. Discuss the uses and applications of photographic techniques in traffic engineering. *10*

8. Write short notes on any ***two*** of the following : *2×5=10*

   (a) Reconnaissance Survey

   (b) Location Survey

   (c) Topographic Map

   (d) Road Pricing

9. Define Expressway. Explain the surveys to be conducted for constructing an expressway. *10*

10. Write short notes on any ***two*** of the following : *2×5=10*

(a) Value of travel time saving

(b) Traffic congestion

(c) Traffic restraints