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BICE-020

B.Tech. CIVIL ENGINEERING (BTCLEVI)

Term-End Examination

December, 2017

00542

BICE-020 : TRANSPORTATION ENGINEERING – II

Time : 3 hours *Maximum Marks : 70*

Note : *Attempt any **five** questions. All questions carry equal marks. Assume suitable data wherever necessary. Use of scientific calculator is allowed.*

1. (a) Explain the necessity and objectives of highway planning. 5

(b) Explain the land use transport model. 5

(c) Briefly discuss the classification of roads. 4

2. (a) Write about the various stages of work in a new highway project. Explain briefly. 7

(b) Write special considerations while aligning roads on hilly areas. 7

3. (a) Discuss PIEV theory for total reaction time of the driver. 7

(b) Find the total width of a pavement on a horizontal curve for a new double lane national highway to be aligned in a rolling terrain with a ruling minimum radius. Assume necessary data. 7

4. (a) Discuss the factors to be considered in the design of pavements. 5

(b) Discuss Westergaard's stress equations of a cement concrete pavement. 5

(c) List out components of a flexible pavement and show them on a typical cross-section. 4

5. (a) Draw neat sketches for traffic manoeuvres. 6

(b) Define the following terms : 8

(i) Traffic volume

(ii) Traffic density

(iii) Traffic capacity

(iv) Basic capacity

6. (a) Write a note on intelligent transport system. 5

(b) Discuss in brief, Expressways and Freeways. 5

(c) Explain motor vehicle operating cost. 4

7. Write short notes on any ***four*** of the following : $4 \times 3\frac{1}{2} = 14$

(a) Spot Speed Study

(b) Regulatory Signs

(c) Expansion Joint

(d) Origin and Destination Studies

(e) GIS in Traffic Engineering

(f) Photographic Technique in Traffic Surveys