B.Tech. CIVIL ENGINEERING (BTCLEVI)

Term-End Examination

December, 2017

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BICE-019 : TRANSPORTATION ENGINEERING – I

Time : 3 hours   *Maximum Marks : 70*

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

1. Define a permanent way and mention its components.   *10*

2. What are the requirements of fish plates ? Discuss with suitable sketches, the different types of fish plates and their uses.   *10*

3. If an 8° curve track diverges from a main curve of 5° in an opposite direction in the layout of a B.G. yard, calculate the superelevation and the speed on the branch line, if the maximum speed permitted on the main line is 45 kmph.   *10*

4. Discuss any two types of railway crossings with the help of neat sketches. *10*

5. (a) Explain the factors that influence the selection of site for a railway station. *7*

    (b) What are the objectives of signalling ? *3*

6. Explain the term Basic Runway Length. Also explain any one of the procedures for determining the actual runway length required at a particular site. *10*

7. Explain the procedure adopted to plot a wind rose diagram. *10*

8. (a) What are the two types of harbours ? Give sketches to illustrate. *4*

    (b) What are the three types of breakwaters ? Give suitable sketches. *6*

9. What are the various systems of controlling the movement of trains ? *10*

10. Why is the study of modern trends essential ? Describe some of the latest researches in railway engineering around the world. *10*

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