| **BICE-019**

B.Tech. CIVIL ENGINEERING (BTCLEVI)

Term-End Examination

⊓⊓﹃﹃⊐ **December, 2016**

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. Discuss the role played by Railways in industrial and economic growth of the nation. Compare railway transportation with road transportation in brief.   *10*

2. What are the different types of rails used in Indian Railways ? Explain with neat sketches.   *10*

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

4. (a) Write the requirements of good sleepers.   *4*

   (b) Using a sleeper density of (n + 5), find out the number of sleepers required for constructing a railway track 640 m long (B.G. Track).   *6*

5. 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 of branch line, if the maximum speed permitted on the main line is 45 km/hr. *10*

6. What is meant by a crossing ? What are the essential requirements of a good crossing ? *10*

7. What are the various systems of controlling the movement of trains ? Explain the working of one system which has been widely used in Indian Railways. *10*

8. Discuss the assumed standard condition taken in the design of runway length. *10*

9. What is the purpose of providing the "turning zone" of airport ? Explain with a neat sketch. *10*

10. What are the different classifications of harbours ? Explain them. *10*

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