

**B.Tech. Civil Engineering
BTCLEVI**

Term-End Examination

December, 2013

00411

BICE-019 : TRANSPORTATION ENGINEERING - I

Time : 3 Hours

Maximum Marks : 70

Note : Attempt any five questions. Use of scientific calculator is permitted.

1. (a) Discuss the role played by Railways in industrial and economic progress of the nation. 7
- (b) Compare Railway transportation with Road Transportation. 7

2. Define following terms of Railway Engineering :
 - (a) Ballast 2x7=14
 - (b) Fog signal
 - (c) Broad Gauge
 - (d) Cant
 - (e) Creep of Rails
 - (f) Crossing stations
 - (g) Fish plates.

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| 3. | (a) | Explain the requirements of an Ideal Permanent Way. | 7 |
| | (b) | Draw a typical cross-section of a permanent way. | 7 |
| 4. | | Discuss different types of rail joints with the help of neat sketches and give their merits and limitations. | 14 |
| 5. | (a) | Write the requirements of good sleepers. | 7 |
| | (b) | Using a sleeper density of $(n+5)$, find out the number of sleepers required for constructing a railway track 640m long. (B.G.Track) | 7 |
| 6. | (a) | On a B.G. 3° curve, the "equilibrium cant" is provided for a speed of 70 kmph. Calculate the value of equilibrium cant. | 7 |
| | (b) | Draw a neat diagram of left hand turnout and show its various component parts. | 7 |
| 7. | (a) | Explain the points to be considered for the choice of site for an airport. | 7 |
| | (b) | Draw the typical layout of Airport and show its various component parts. | 7 |
| 8. | (a) | What are the constituent parts of a harbour ? Give a sketch to illustrate. | 10 |
| | (b) | What is the function of a break water ? Enumerate the types of breakwaters. | 4 |