

Transportation II

Assignment 2

Q.1 Calculate all the necessary elements required to set out a 1 in 12 turnout, taking off from a straight N.G track with its curve starting from the toe of the switch, i.e., tangential to the gauge face of the outer main rail and passes through theoretical nose of crossing, i.e. TNC. Given, heel-divergence = 11.4 cm.

Q.2 Calculate the elements of a turnout, when it is given $G = 1.676\text{m}$, $N = 8.5$, $d = 13.3\text{ cm}$ and angle of switch, i.e., $\beta = 1^{\circ}8'0''$.

Q.3 On a straight B.G track, a turnout takes off at an angle $6^{\circ}42'35''$, design the turnout when it is given, angle of switch = $1^{\circ}34'27''$, the length of switch-rails is 4.73 m, heel divergence, i.e. $d = 11.43\text{ cm}$ and x , i.e. straight arm = 0.85 m.

Q.4 Find out the expression for sleeper density for a B.G track if 19 sleepers are used under a rail length.

Q.5 Using a sleeper density of $M+5$, find out the number of sleepers required for constructing a railway track 640 m long (B.G Track).

Q.6 Calculate the actual length of runway from the following data:

Airport elevation: R.L 150

Airport reference temperature: 27°C

Basic length of runway: 600 m

Highest point along the length: R.L 98.2

Lowest point along the length: R.L 94.2