Code No: **R32016** **R10** **Set No. 1**

III B.Tech II Semester Supplementary Examinations, Dec - 2015
TRANSPORTATION ENGINEERING-II
(Civil Engineering)

Time: 3 hours **Max. Marks: 75**

Answer any FIVE Questions
All Questions carry equal marks
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1 a) What is Creep? Enlist the causes, effects and the steps involved in the Adjustment of creep. [8]
b) What are Sleepers? What are the advantages and disadvantages of Concrete sleepers? [7]

2 a) Define the terms (i) Ruling gradient, (ii) Pusher gradient, (iii) Momentum gradient and (iv) Compensated gradient for curvature. [8]
b) Calculate the super elevation, maximum permissible speed and transition length for a 5 degree curve on a high speed BG section with a maximum allowable speed of 90 kmph. Assume the equilibrium speed to be 60 kmph and the booked speed of the goods train to be 40 kmph. [7]

3 a) Draw a neat sketch of Right hand turn out, clearly showing the various elements. [8]
b) Two BG tracks cross each other at an angle of 1 in 12. Calculate the important dimensions of the diamond crossing. [7]

4 a) Differentiate between Mechanical and Electrical signalling systems. [8]
b) Briefly describe the locations and purposes of the following signals (i) Warner, (ii) Outer, (iii) Home Starter and (iv) Advance starter. [7]

5 a) Explain the various Surveys to be conducted and the data to be collected for Airport site selection. [8]
b) The length of runway at sea level, standard atmospheric conditions and zero gradient is 1450 m. The airport site has an elevation of 850 m, and the reference temperature as 21° C. If the proposed runway grading permits an effective gradient of 0.15 percent, determine the actual runway length required at the site. [7]

6 a) Explain in detail the causes for Airfield Rigid pavement failures. [8]
b) What are the different types of Sub surface drainages? Explain the necessity of each type. [7]

7 a) Define (i) Anchorage area, (ii) Free port, (iii) Beam, (iv) Draft (v) Ballast, (vi) Channel line and (vii) Guard houses. [8]
b) What are the requirements of a good Harbour? Write a detailed note about harbour classification based on utility. [7]

8 a) Define the term Break waters. Write a note about the different types. [8]
b) Define (i) Buoyancy, (ii) Buoyancy Factor, (iii) Net Buoyancy, (iv) Float, (v) Luminous flux, (vi) Luminance and (vii) Pilotage. [7]

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