

**II B. Tech II Semester Supplementary Examinations, February - 2022**  
**TRANSPORTATION ENGINEERING - II**  
 (Civil Engineering)

Time: 3 hours

Max. Marks: 75

Answer any **FIVE** Questions each Question from each unit  
 All Questions carry **Equal** Marks

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- 1 a) What is Ballast? What are the different types and enumerate the requirements of Good ballast. [8M]  
 b) Determine the number of sleepers required for the construction of 2000 m of BG track, with a sleeper density of  $N + 7$ . [7M]
- Or
- 2 a) Write the functions of sleepers? [8M]  
 b) Find the number of sleepers required for constructing a B.G. railway track 640m long, using a sleeper density of  $M+5$ , where M is the length of the rail in metres. [7M]
- 3 a) What is the need for providing transition curves on railways? Explain how the length of transition curve is decided. [8M]  
 b) Explain the necessity of widening of gauge on curves. [7M]
- Or
- 4 a) Explain the concept creep using percussion theory? How do you rectify creep? [8M]  
 b) Compute the maximum permissible speed for the following data on a curve of high speed B.G for the following data. Degree of curve = 1.2, Amount of super elevation = 8cm, Length of transition curve = 150 m, Maximum sanctioned speed likely to be 135kmph. [7M]
- 5 a) Write short notes on Warner signal, Shunting signal, Disc signal and routing signal. [8M]  
 b) Explain the working principle of centralized traffic control system and automatic train control system. [7M]
- Or
- 6 a) What do you understand negative super elevation? Explain string line method of realignment of curves. [8M]  
 b) What is the principle stop signal? Explain its components with the help of a neat signal. [7M]
- 7 a) Discuss how the analytical methods differ empirical methods and semi empirical methods for the design of airfield pavements. [8M]  
 b) Discuss in brief about maintenance management system in reference to airfield Pavements. [7M]
- Or
- 8 a) Explain the causes of airfield flexible pavement failures. [8M]  
 b) What is winder one diagram? Explain its importance. [7M]



- 9 a) Explain the formation of tides. Explain tidal day, spring tides and neap tides. [8M]  
b) What are the factors to be considered for the selection of harbors on a sandy coast and Lower reach of a river? [7M]

Or

- 10 a) Explain briefly about various types of dredgers. [8M]  
b) Illustrate the requirements of a good port? [7M]

