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Reg No.: _____

Name: _____

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY

Seventh Semester B.Tech Degree (S, FE) Examination January 2023 (2015 Scheme)

Course Code: CE407

Course Name: TRANSPORTATION ENGINEERING - II

Max. Marks: 100

Duration: 3 Hours

PART A

Answer any two full questions, each carries 15 marks.

Marks

- 1 a) Explain the factors affecting selection of railway alignment. (5)
- b) What is meant by super elevation? State the objectives of providing super elevation (5)
- c) Explain coning of wheels and its significance. (5)
- 2 a) Distinguish between creep and kink. (5)
- b) Write short note on MRT and LRT (5)
- c) Explain drag theory and percussion theory related to creep. (5)
- 3 a) Determine the number of sleepers required for the construction of a 1800-m-long BG railway track, ensuring a sleeper density of $(N + 5)$. Length of rail is 12.8 m. (6)
- b) Why heavier rails are preferred to light rails in a BG track? (5)
- c) What are the various factors that govern the choice among different gauges in railway track? (4)

PART B

Answer any two full questions, each carries 15 marks.

- 4 a) Write short notes on Warner signal, Shunting signal, and routing signal with neat sketches (6)
- b) Distinguish between Through packing and Scissor Packing (4)
- c) Draw the sketch of a right hand turnout and mark the salient features. (5)
- 5 a) State the functions of marshalling yards. Explain types of marshalling yards with the help of sketches. (10)
- b) Explain the procedure for maintenance of sleepers. (5)
- 6 a) Explain the principle of track circuiting with the help of a diagram. (8)
- b) Explain various measures to be taken for preventing railway accidents due to failure of human elements. (7)

PART C

Answer any two full questions, each carries 20 marks.

- 7 a) Illustrate any two methods of tunnel construction in soft ground with the help of sketches. (12)
- b) Explain various methods for dewatering during construction of tunnel? (8)
- 8 a) Explain the working of Tunnel Boring Machine (TBM) with help of sketches. (10)
- b) What are the various types of navigational aids? Explain any four types. (10)
- 9 a) What are the factors to be considered in the choice of site for harbour? (5)
- b) What is littoral drift? Explain the effects of littoral drift along a coast in planning a harbour. (7)
- c) Differentiate between Mound and Wall Type Breakwater (8)
