

Reg No.: _____

Name: _____

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY

Seventh Semester B.Tech Degree Examination (Regular and Supplementary), December 2020

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) Describe the role of Indian railway in national development. (5)
- b) Distinguish between LRT and MRT. (10)
- 2 a) Sketch the components of a permanent way and mark the salient points. (5)
- b) What is sleeper density? Explain the function of sleepers. (5)
- c) Explain different types of gradients used in rail alignments. (5)
- 3 a) Write a brief note on ballast less tracks. (5)
- b) Find the final gradient for a broad gauge track where the grade resistance together with curve resistance due to a 2° curve is equal to the resistance due to a ruling gradient of 1 in 200. (5)
- c) Write Brief note on tube rail way. (5)

PART B*Answer any two full questions, each carries 15 marks.*

- 4 a) Explain the procedure of 'Through packing' and 'Scissor packing' and highlight the difference between them. (5)
- b) What are the type of accidents generally occur in Indian Railways. What are the remedial measures? (6)
- c) Explain the working of absolute block system. (4)
- 5 a) A turnout takes off from a straight BG track at an angle of $1^\circ 40' 22''$ with crossing angle $5^\circ 59' 20''$. Length of the switch rail is 4.72m. Heel divergence is 11.7cm. Straight length of the track at the crossing is 0.8m. Design the turnout. (8)
- b) Draw a neat sketch of a Left hand turnout and mark its components. (7)
- 6 a) Explain how the accidents are classified on Indian Railways. Explain the various aids and methods for preventing railway accidents. (8)

- b) What are the different systems of controlling the movement of trains? Explain the working of ATC system. (7)

PART C

Answer any two full questions, each carries 20 marks.

- 7 a) Write brief note on (10)
i) Lighting and ii) ventilation of tunnelling
- b) Explain the working of i) TBM ii) Compressed Air method of tunnelling (10)
- 8 a) What are the classifications of tunnelling? (5)
- b) Write a brief note on tunnel lining. (7)
- c) What are breakwaters? Explain the necessity and functions of breakwaters. (8)
- 9 a) What are different types of Docks? Explain its functions. (7)
- b) Enlist various forces acting on break water and principles of design. (7)
- c) What are the types of signals and functions of signals used in ports? (6)
