

Reg No.: _____

Name: _____

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY
SEVENTH SEMESTER B.TECH DEGREE EXAMINATION(R&S), MARCH 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

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| 1 | a) What are the modern developments in Railways | (8) |
| | b) Explain track-alignment? What are the factors which control the alignment of a railway track? | (7) |
| 2 | a) Write the different types of rail section. Mention relative merits and demerits of flat footed rails and bull headed rails. | (5) |
| | b) What should be the actual ruling gradient if the ruling gradient is 1 in 130 on a MG and a curve of 4 degree is super imposed on above track section? | (5) |
| | c) Explain in brief LRT and MRTS. | (5) |
| 3 | a) From a BG yard an 6° curve branches off from a 3° main curve. If the speed is restricted to 35 km/h in the branch line and the permissible value of cant deficiency is 75 mm, determine the speed restriction on the main line. | (8) |
| | c) What is creep? What are the causes and effects of creep? | (7) |

PART B

Answer any two full questions, each carries 15 marks.

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| 4 | a) A turnout is to be laid off a straight BG track with a 1 in 12 crossing. Determine the lead and radius of turnout with the help of following data: heel divergence = 133mm, crossing angle 4°45'49", switch angle 1°8'0", straight length between the theoretical nose of crossing and tangent point of crossing = 1.418m. | (8) |
| | b) Explain the procedure of 'Through packing' and 'Scissor packing' and highlight the difference between them. | (7) |
| 5 | a) Describe the various possible causes which may result into a railway accident and suggest the possible remedies for each | (8) |
| | b) What are the different systems of controlling the movement of trains? Explain the working of one system which has been widely used on Indian Railways. | (7) |

- 6 a) Explain with neat sketch Reception signal and Departure signals (5)
b) Explain the procedure of periodic track maintenance in detail. (5)
c) Differentiate between C.T.C. system and A.T.C. system (5)

PART C

Answer any two full questions, each carries 20 marks.

- 7 a) What are the requirements of a good harbour? (10)
b) Compare mound type break water with wall type breakwater with the help of sketches (10)
- 8 a) Explain the shield method of tunnelling with help of a sketch (10)
b) What is the necessity of railway tunnel? Draw a sketch to illustrate a single track railway tunnel? (10)
- 9 a) Explain in detail the procedure of providing drainage and ventilation in tunnels. (10)
b) Write short notes on: (10)
(i) Moorings
(ii) Wharves
(iii) Transit Shed
(iv) Quays
