

Reg No.: _____

Name: _____

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY
SEVENTH SEMESTER B.TECH DEGREE EXAMINATION(S), MAY 2019

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) Sketch the typical cross section of B.G. track on embankment (5)
- (b) Describe the functions and requirements of ballast (10)
- 2 (a) What is coning of wheel? Why is it necessary for rail wheel interactions? (5)
- (b) A 8° curve diverges from a main curve of 5° in an opposite direction in the layout of a BG yard, calculate the super elevation and speed on the branch line, if the maximum speed permitted on the main line is 45km.p.h. (10)
- 3 (a) What is meant by super elevation? What are the objects of providing SE on curves? (4)
- (b) Compare and differentiate the different types of rails with neat sketches. (6)
- (c) What are the various causes of creep? (5)

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

- 4 a) Draw a sketch showing positions of various signals for a junction of two main line and two branch lines with a siding (5)
- b) What is a yard? What are the different types of yards? Explain the functions of a Marshalling yard and describe the points to be considered in its design. (10)
- 5 a) A 1 in 8.5 crossover is laid between 2 BG parallel tracks with their centres 5m apart. Find length of straight track and overall length of the crossover. (5)
- b) Explain different types of railway signals according to their function. With the help of neat sketch explain the essential features and working principle of a Semaphore type signal. (10)
- 6 a) Differentiate between 'Daily maintenance' and 'Periodic maintenance' (4)
- b) Write short notes on warner signal, Shunting signal, and routing signal with neat sketches (6)
- c) What is Through packing and Scissor Packing? List the difference between them (5)

PART C

Answer any two full questions, each carries 20 marks.

- 7 a) Classify harbours on the basis of utility and explain the uses and requirements of them. (10)
- b) How is transferring of center line into the tunnel carried out? Explain with the help of neat diagram (10)
- 8 a) What is a bulk head? Explain shield method of tunnelling through water bearing soils (10)
- b) What is a dry dock? What are the classifications of dry dock? Explain in detail, any two types of dry docks with neat sketches. (10)
- 9 a) Explain the requirements of a good harbour. (5)
- b) Write short note on: (10)
- (i) Spring and Neap Tide
 - (ii) Littoral Drift
 - (iii) Tidal Bore
 - (iv) Offshore moorings
- c) Enumerate the various ship characteristics that affect the harbour design. (5)
