

Reg No.: \_\_\_\_\_

Name: \_\_\_\_\_

**APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY**  
SEVENTH SEMESTER B.TECH DEGREE EXAMINATION(R&S), DECEMBER 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) What is the equilibrium cant on a  $2^0$  curve on a BG track, if the speed of various trains are 10 trains at 50km.p.h., 8 trains at 55 km.p.h. and 4 trains at 60km.p.h. respectively (5)
- b) Describe the functions and requirements of sleepers (10)
- 2 a) What is meant by Super elevation? What are the objects of providing SE on curves? (5)
- b) What is creep? What are the various causes of creep? List the various remedial measures (10)
- 3 a) Explain the term ballast less tracks and explain its advantages. (4)
- b) What are the factors affecting the selection of gauges? (5)
- c) Compare and differentiate the different types of rails with neat sketches. (6)

**PART B**

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

- 4 a) Discuss on Conventional and Advanced Remedial Aids for preventing railway accidents. (5)
- b) Explain different types of railway signals according to their operational characteristics. With the help of neat sketch explain the essential features and working principle of a Semaphore type signal. (10)
- 5 a) Draw a neat sketch of a Right hand turnout and mark its components. (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)
- 6 a) Explain (i) Three-throw (ii) Gathering lines (4)
- b) Explain locomotive yard and its components (5)
- c) What are the different systems of controlling the movement of trains? Explain the working of absolute block system. (6)

**PART C**

*Answer any two full questions, each carries 20 marks.*

- 7 a) What is an air lock? Describe the air lock method of tunnelling in soft soil (10)
- b) Write short note on (i) Spring and Neap Tide (iii)Littoral Drift (iv) Tidal Bore (10)  
(v)offshore moorings
- 8 a) How is transferring of center line into the tunnel carried out? Explain with the (10)  
help of neat diagram
- b) State the natural and meteorological phenomena a harbour engineer has to study (10)  
and briefly mention the effects of these phenomena
- 9 a) Write short notes on (10)
- a) Wet Docks
- b) Navigational aids
- b) Write down the procedure for constructing a tunnel in water bearing soil. Explain (10)  
its advantages.(Draw necessary diagrams)

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