

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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