

--	--	--	--	--	--	--	--	--	--



P.E.S. College of Engineering, Mandya - 571 401

(An Autonomous Institution affiliated to VTU, Belagavi)

Sixth Semester, B.E., - Civil Engineering

Semester End Examination; June - 2017

Transportation Engineering

Time: 3 hrs

Max. Marks: 100

Note: Answer *FIVE* full questions, selecting *ONE* full question from each Unit.

UNIT - I

1. a. What are the Train Resistances in railway tracks? Explain. 6
- b. With a neat sketch, explain the coning of wheels and its effects on rail. List the advantages of coning. 8
- c. Define Gauge of Railway Track. Enumerate different gauges used in India. 6
- 2 a. Draw a neat cross-section of B.G. track for double line in cutting on curved track. 6
- b. What are the stresses in Railway tracks? Explain. 8
- c. Explain how you determine Hauling capacity of locomotive. 6

UNIT - II

- 3 a. What is meant by wear of rails? Discuss the various causes of wear and suitable measures to reduce the effect of wear on rails. 8
- b. What are the requirements of ideal joints? 6
- c. Illustrate the various steps of rail failures with sketches. 6
- 4 a. Describe briefly the causes and effects of creep. How is it minimized and measured? 8
- b. What are the functions and requirements of good sleeper? 6
- c. Write a note on quantity of Ballast and depth of Ballast. 6

UNIT - III

- 5 a. Draw a neat diagram of Left Hand Turnout and show its various components. 8
- b. Calculate the cant deficiency and permissible speed for 4° curve on a BG Track. 6
- c. Write a note on negative superelevation. 8
6. a. Describe the factors that influence the selection of site for a Railway station. 8
- b. Draw a neat sketch of a right-angle crossing. 6
- c. Define interlocking and explain the principle of interlocking. 6

UNIT - IV

- 7 a. What data are to be collected for regional planning? Explain. 6
- b. What do you understand by the term basic runway length? Explain the procedure of determining the actual runway length. 8

- c. What are the corrections to be made while designing basic runway length? Explain. 6
- 8 a. Explain briefly the various factors which affect the layout of taxiway. 6
- b. Write short notes on Airport Marking and Airport lighting. 6
- c. Design an exit taxiway joining a runway and a parallel main taxiway. The total angle of turn is 30° and the turn off speed is 80 kmph. Draw a neat sketch and show all the design elements. 8

UNIT - V

- 9 a. Explain the importance of tunnel construction and state the limitations of tunnel construction. 6
- b. Explain Linear Plate Method of tunneling. 6
- c. Write short notes on Tunnel Lining and Tunnel ventilation. 8
- 10 a. How are harbours classified on the basis of location? 6
- b. Define Breaker water and mention its classification. 6
- c. Distinguish between Dry Dock and Wet Dock. 8

* * * *