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Sixth Semester B.E. Degree Examination, Dec.2015/Jan.2016
Transportation Engineering - II

Time: 3 hrs.

Max. Marks:100

**Note: Answer any FIVE full questions, selecting
atleast TWO questions from each part.**

PART - A

- 1 a. Describe the role played by rail transport in growth and development of a country. (08 Marks)
b. Compare advantages and disadvantages of air transport with rail transport at least priority wise any three? (12 Marks)
- 2 a. Draw a neat sketch of double line B.G. track and mention various components. (08 Marks)
b. With neat sketch, explain what is coning of wheels what are advantages of coning of wheels. (12 Marks)
- 3 a. Describe the functions of sleepers, fastenings and fixtures. (08 Marks)
b. What is the purpose of designing alignment of track? Derive the equation for the theoretical cant, for B.G., M.G. and N.G. (12 Marks)
- 4 a. What are the objectives of providing transition curve? Draw neat sketch of Bernoulli's lemniscate on Fraud's cubic parabola and spiral transition curves. (12 Marks)
b. Calculate all the necessary elements required to set out a 1 in 8½ turnout, taking off from a straight B.G. track with its curve starting from the toe of the switch ie tangential to the gauge face of the outer main rail and passes thorough theoretical nose of crossing ie. TNC. Given heel divergence d = 11.4 cm. (08 Marks)

PART - B

- 5 a. List and explain aircraft characteristics which affect the planning and design of airports. (10 Marks)
b. Mention the factors considered in the selection of a suitable site for airport in view of criteria for temperature, elevation and gradient. (10 Marks)
- 6 a. Define optimum airport capacity. Mention various factors affecting airport capacity and explain with neat sketch. (10 Marks)
b. What is wind rose diagram? Explain any one method of constructing wind rose diagram. (10 Marks)
- 7 a. Explain the principle adopted in design of taxiway connecting runway. And different runway orientation explain with neat sketch. (10 Marks)
b. If the cross - wind component is more than 25 kmph, how runway capacity can be enhanced by adopting holding apron near exit taxiway draw a neat sketch and explain. (10 Marks)
- 8 a. With the help of neat sketch, explain the transfer of centre - line from surface to tunnel. (08 Marks)
b. Explain the classification of harbours or dock based on function or purpose. (06 Marks)
c. What is fender or tetrapods adopted in design of break water or dolphins? (06 Marks)

Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.
2. Any revealing of identification, appeal to evaluator and /or equations written eg, 42+8 = 50, will be treated as malpractice.