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B.TECH.

THEORY EXAMINATION (SEM–VIII) 2016-17

TRANSPORTATION ENGINEERING – II

Time : 3 Hours *Max. Marks : 100*

Note : *Be precise in your answer. In case of numerical problem assume data wherever not provided.*

SECTION – A

1. Explain the following: **10 x 2 = 20**

(a) Compare different modes of transport with reference to any two geometric design elements.

(b) Why is it advisable to have narrow railway gauge in a mountainous country?

(c) State the position of sleepers at points and crossings.

(d) What does crossing in a railway track mean? What are its essential requirements?

(e) Enumerate different methods of interlocking.

(f) Why is a site on top of a hill considered more suitable for locating an airport than that on a valley?

(g) Enumerate any four factors which affect the size of an airport.

(h) Why is landing and takeoff operations performed along head winds?

(i) Enumerate any two merits and de-merits of water transport.

(j) List any four characteristics of vessels influencing the design of a harbor.

SECTION – B

2. Attempt any five of the following questions: **5 x 10 = 50**

(a) Explain with neat sketches, the concept of 'coning' and discuss its merits and demerits.

(b) Illustrate with neat sketches a single line and double line B.G track in embankments. Indicate the pattern of failure of an embankment and suggest remedies.

(c) Explain any four methods adopted to control movements of train and compare their merits.

(d) Define the different types of yards and explain their functions with neat sketches.

(e) Explain the necessity of airports classification. Give different systems of classification of airports.

(f) Explain with a neat sketch to show how 'lighting' is done on a runway.

(g) Discuss airport drainage with a neat sketch.

(h) Draw a layout of any one harbor in India, explain its salient features and list available terminal facilities.

SECTION – C

Attempt any two of the following questions: **2 x 15 = 30**

3. (i) A vehicle moving on a B.G track has a wheelbase of 4.724m.diameter of the wheel is 1524mm.flanges project 32mm below top of rail. Radius of curvature is 168m.determine extra width of flange.

(ii) Illustrate with neat sketches various types of track junctions adopted by Indian railways. State their merits and the context in which each type is adopted.

4. (i) Explain with neat sketches, various 'markings' on a runway.

(ii) The R.Ls of highest and lowest points along the length of a runway of above said airport are 98.5 and 96.5.apply correction for effective gradient and find the final corrected length of runway.

5. (i) Describe any eight factors of site investigation of harbors and the significance of each one of them.

(ii) Give a brief account of any four coastal structures with neat sketches and state their location and functions.