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	7E7064	
B.Tech. VII - Semester (Main & Back) Examination, Nov. - 2019		
Civil Engineering		
7CE4A Transportation Engineering - II		

Time : 3 Hours

Maximum Marks : 80
Min. Passing Marks : 26

Instructions to Candidates:

Attempt any five questions, selecting one question from each unit. All questions carry equal marks. (Schematic diagrams must be shown wherever necessary. Any data you feel missing suitably be assumed and stated clearly) Units of quantities used/calculated must be stated clearly.

~~UNIT - I~~

1. a) Draw a neat sketch of a permanent way on an embankment. Name the various components. (8)

b) What is coning of wheels? What are advantages of coning? (8)

(OR)

1. a) Mention the advantages of using a uniform Gauge for railway track in a country. What common Gauges are used in India? (8)

b) Why creep in rails occurs? Mention the remedial measures to prevent creep. (8)

~~UNIT - II~~

2. a) Through a diagram show a typical layout of a left hand turnout of railway track. Name and show its various components. (8)

b) What are the objectives of Urban mass Transportation? Which Railway systems of mass transportation are used in Indian cities? (8)

(OR)

2. a) What are the function of point and crossings in a Railway track? Mention requirements of a good crossing. (8)

b) Explain the following :

i) Popular railway Mass transportation system networks.

- ii) Gauntlet track
- iii) Check rails
- iv) Double turnout.

(8)

UNIT - III

3. a) Why super elevation is provided on railway curves? Explain negative super elevation. (8)
- b) Describe the purpose of different type of Gradients used in a Railway track. (8)

(OR)

3. a) Derive an expression, relating super-elevation (e), width of Railway Gauge (G), Speed (V) and the Radius of Curve (R). (8)
- b) What are the objectives of providing Transition curves of Railways? Explain how length of Transition curve is decided. (8)

UNIT - IV

4. a) Draw a Typical layout of an International Airport. Showing its component parts. Briefly mention function of each component. (8)

- i) Cross wind component
- ii) Basic runway length
- iii) Imaginary surfaces
- iv) Runway Threshold.

(8)

(OR)

4. a) Why corrections are required to Runway Lengths? What are the recommendations for applying the different corrections? (8)

b) Write short notes on the following :

- i) Wind Rose diagram
- ii) Runway patterns.
- iii) Aprons in an airport
- iv) Terminal Building and its functions.

(8)

(2)

~~USP.V~~

5. a) What are the significant differences between principles of Airport Pavement Design from design of highway pavements. (8)
- b) Explain the following: (8)
- Equivalent single wheel load (ESWL)
 - Westergaard's method of Rigid Pavement Design. for airport pavements.

(OR)

5. a) Describe the various factors that are considered in structural design of airport pavements. (8)
- b) Explain the following:
- Radius of relative stiffness.
 - CBR method of Flexible pavement Design for airport pavements. (8)



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