

G 747

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Reg. No.....

Name.....

**B.TECH. DEGREE EXAMINATION, MAY 2014**

**Seventh Semester**

**Branch : Civil Engineering**

**CE 010 705 – TRANSPORTATION ENGINEERING – II (CE)**

**(2010 Admissions)**

**[Improvement/Supplementary]**



**Time : Three Hours**

**Maximum : 100 Marks**

**Part A**

*Answer all questions.*

*Each question carries 3 marks.*

1. List the classification of Highways.
2. Define Superelevation in roads.
3. Discuss the importance of Traffic studies.
4. State the important tests for aggregates for road work.
5. Explain the classification of Airport with examples.

**(5 × 3 = 15 marks)**

**Part B**

*Answer all questions.*

*Each question carries 5 marks.*

6. Sketch the typical cross-section of a road in urban area and explain.
7. Define Horizontal curves in Highway alignment. Discuss the classification.
8. Write short note on Traffic island.
9. Write brief note on Highway drainage.
10. Write brief note on use of Wind Rose diagrams.

**(5 × 5 = 25 marks)**

**Turn over**

**Part C**

*Answer all questions.*

*Each question carries 12 marks.*

11. Discuss the various engineering surveys for Highway alignment.

*Or*

12. Define Sight distance and Minimum length of overtaking zone in Highways. Calculate safe overturning sight distance and minimum length of over turning zone of the speed of overtaking and overtaken vehicle are 70 and 40 kmph respectively on a two-way traffic road. The acceleration of the overtaking vehicle is  $1 \text{ m/s}^2$ . Draw a neat sketch of over taking zone.

13. Define Transition curves in road alignment. Discuss the factors to be considered for fixing length of transition curve. Explain different types of transition curves.

*Or*

14. A valley curve is formed in such a way that the ascending gradient is  $1/40$  and descending gradient  $1/30$ . Design the length of valley curve to fulfill comfort condition and head light sight distance for a speed of 60 kmph. Assume allowable rate of change of centrifugal acceleration  $0.5 \text{ m/s}^2$ .

15. State different types of traffic signals used at road crossings and state their relative merits. Sketch one road crossing and signalling in your town.

*Or*

16. Briefly explain the traffic characteristics of Highway roads in Kerala.
17. Briefly explain the types of causes of failure of rigid pavements in Highways. Discuss the remedial measures.

*Or*

18. Explain the desirable properties and their tests for bitumen used for pavement construction.

19. Sketch a typical Airport and explain its working.

*Or*

20. Briefly explain the air traffic control.



(5 × 12 = 60 marks)