

**F 3364**

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Reg. No.....

Name.....



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

**Seventh Semester**

Branch : Civil Engineering

CE 010 705—TRANSPORTATION ENGINEERING—II (CE)

(New Scheme—2010 Admission onwards—Regular/Supplementary)

Time : Three Hours

Maximum : 100 Marks

**Part A**

*Answer all questions.*

*Each question carries 3 marks.*

1. Define stopping sight distance. Express intermediate sight distance and headlight sight distance in terms of stopping sight distance.
2. Explain briefly grade compensation.
3. List out any three types of traffic signal system.
4. List out the factors to be considered for the design of pavements.
5. Define apron, stopway, taxiway.

(5 × 3 = 15 marks)

**Part B**

*Answer all questions.*

*Each question carries 5 marks.*

6. List out the various factors on which stopping sight distance depends. Explain PIEV theory.
7. Explain extrawidening and factors on which extrawidening depends.
8. List out the advantages and disadvantages of grade separated intersection.
9. Explain the shape tests conducted on aggregates.
10. Write a brief note on aircraft characteristics.

(5 × 5 = 25 marks)

**Part C**

*Answer all questions.*

*Each full question carries 12 marks.*

11. Explain basic requirements and factors controlling alignment of roads.

Or

**Turn over**

12. (a) The design speed on a road is 60 kmph. What is the required stopping sight distance for 2 way traffic on a single lane road if the coefficient of friction of pavement surface is 0.35 and driver reaction time is 2.5 seconds. (6 marks)
- (b) Write short notes on right of way, kerbs, shoulders. (6 marks)
13. (a) The design speed on a curve is 65 kmph and radius is 325 m. What is the length of the transition curve on a plain terrain as per IRC empirical formula. Also determine the shift for this transition curve. (6 marks)
- (b) What is the length of summit curve required for a stopping sight distance of 160 m. on a National Highway at the junction of a rising gradient of 1.5 % and a falling gradient of 2 %. (6 marks)

Or

14. (a) What is the extrawidening required for a pavement of width 7 m. on a horizontal curve of radius 250 m. and design speed of 80 kmph. The longest wheelbase of vehicle expected on the road is 7.0 m. (8 marks)
- (b) Define ruling gradient, limiting gradient, exceptional gradient and minimum gradient. (4 marks)

15. Explain various tests conducted on bitumen.

Or

16. Explain typical flexible pavement failures with neat sketches.
17. Write a note on airport lighting.

Or

18. (a) Write brief notes on approach zone, turning zone, wind rose diagram. (6 marks)
- (b) Explain zoning laws. (6 marks)
19. Explain the term traffic volume. Explain the different methods of carrying out traffic volume studies.

Or

20. (a) Explain the home interview method for collecting origin and destination data. (6 marks)
- (b) Write short notes on PCU, Thirtieth highest hourly volume, 85th percentile speed. (6 marks)

[5 × 12 = 60 marks]

