G 1344 (Pages : 2) Reg. No.....

Name.....

B.TECH. DEGREE EXAMINATION, MAY 2016

Seventh Semester

Branch : Civil Engineering

CE 010 705—TRANSPORTATION ENGINEERING—II

Time : Three Hours Maximum : 100 Marks

Assume suitable data wherever necessary.

Part A

Answer **all** *questions.*
Each question carries 3 *marks.*

1. Draw the typical cross section of rural arear.
2. Explain Transition curves.
3. List traffic control device.
4. Explain flexible pavements.
5. Explain Clearway.

(5 × 3 = 15 marks)

Part B

Answer **all** *questions.*
Each question carries 5 *marks.*

6. Write a note on :
   (i) Median ;
   (ii) Kerbs.
7. Briefly explain vertical curves.
8. Explain the disadvantages of traffic signals.
9. List the test conducted on bituminous material.
10. Write a note on aircraft parking system.

(5 × 5 = 25 marks)

Part C

Answer **all** *questions.*
Each full question carries 12 *marks.*

11. Explain requirement and factors controlling alignment of roads.

Or

12. (i) A vehicle is travelling at an average speed of 100 km/h under the following conditions :—

(a) Level Surface ;

(b) Upward gradient of 1.98% ;

(c) Downward gradient of 2%.

Assume perception and break reaction time = 2.5 sec and coefficient of longitudinal friction between vehicle tires and road surface = 0.35. Determine safe stopping sight distance.

(6 marks)

(ii) Explain road margin and right of way. (6 marks)

13. (i) A vertical curve is formed when an ascending gradient of 1 in 30 meets a descending gradient of 1 in 40. The curve is to be designed to provide OSD for a design speed of 80 km/h. calculate the suitable length of the summit curve. Assume suitable data.

(6 marks)

(ii) A national highway is passing through plain rolling and hilly areas. According to IRC guidelines design super elevation for the given condition.

(a) For Plain Terrain :

Ruling Design Speed : 80 kmph and horizontal curve radius : 215 m.

Ruling Design Speed : 100 kmph and horizontal curve radius : 137 m.

Or

14. Calculate the length of transition curve and shift to be provided in a built up area using the following data. Design speed 80 kmph, radius 240 m, pavement rotated about centerline, pavement width 7.5 m.

15. Explain the classification of road sign.

Or

16. Explain types of road intersection.

17. Explain the construction procedure for bituminous surface dressing.

Or

18. (i) Explain the types and causes of failure in rigid pavement. (6 marks)

(ii) Write a short note on highway drainage. (6 marks)

19. (i) How is the runway orientation decided ? (6 marks)

(ii) Write a note on airport lighting. (6 marks)

Or

20. (i) Write a note on navigational aids and landing aids. (6 marks)

(ii) Write a note on obstruction and zoning law. (6 marks)

[5 × 12 = 60 marks]