Reg. No. _____

Karunya University

(Karunya Institute of Technology and Sciences)

(Declared as Deemed to be University under Sec.3 of the UGC Act, 1956)

End Semester Examination – November/December 2010

Subject Title: HIGHWAYS AND RAILWAYS ENGINEERING **Time: 3 hours**

Subject Code: CE264 **Maximum Marks: 100**

Answer ALL questions

PART – A (10 x 1 = 10 MARKS)

1. Write the various modes of surface transport.
2. Mention the name of the organizations which offer suggestions and technical support for road development projects.
3. What is meant by PIEV?
4. Define the term minimum gradient.
5. Based on the structural behavior how are pavements classified?
6. What are the components of a flexible pavement?
7. Draw a simple line sketch of any two rail sections.
8. List out the advantages of welding of rails.
9. State how stations are classified based on their functional utility.
10. How will you control the movement of train?

PART – B (5 x 3 = 15 MARKS)

11. What are the objectives of highway planning?
12. Define the term super elevation.
13. Enumerate the various factors to be considered in the design of pavements.
14. State how sleepers are classified based on materials.
15. What is the purpose of providing points and crossings?

PART – C (5 x 15 = 75 MARKS)

16. Draw a neat sketch showing the cross-section elements of road and make a comment on it.

(OR)

17. a. Explain the role of IRC and CRRI in the development of roads in India. (8)
    b. Discuss the various stages of carrying out engineering surveys. (7)

18. A two lane road with design speed of 81kmph has horizontal curve of radius 480m. Design the rate of super elevation for mixed traffic. How much outer edges of pavement be raised with respect to the centre line, if the pavement is rotated with respect to the centre line and the width of pavement at the horizontal curve is 7.5m.

(OR)

19. a. Write a note on PIEV theory. (8)
    b. With a neat sketch explain overtaking sight distance. (7)

20. Explain Flexible and rigid pavements and bring out the differences.

(OR)

21. a. Briefly discuss any one method used for the design of flexible pavement. (8)
    b. Give the advantages of CBR method. (7)

[P.T.O]

22. Compare highway transportation and rail road transportation.

(OR)

23. a. Explain different types of Crossings. Give the respective sketches. (8)
    b. Enumerate the various causes for creep. (7)

24. Discuss the various classifications of railway stations in India.

(OR)

25. a. Comment on “control of train movement”. (8)
    b. Write a brief note on speed of trains. (7)