**Karunya University**

**(Karunya Institute of Technology and Sciences)**

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

**Supplementary Examinations – June 2016**

**Subject Title: Transportation Engineering Time : 3 hours**

**Subject Code: 14CE2014 Maximum Marks: 100**

**Answer ALL questions (5 x 20 = 100 Marks)**

1. a. Explain Sight distance and its types. (15)

b. Discuss the requirements of a pavement. (5)

**(OR)**

2. Find the minimum sight distance to avoid head on collision of two approaching cars at 90kmph and 80kmph, Brake efficiency=50%. (Take f=0.7, t=3s).

3. a. Write down the step by step procedure for the Designing of Super elevation. (15)

b. Discuss any four requirements of Highway alignment. (5)

**(OR)**

4. Calculate the ruling minimum and absolute minimum radius of horizontal curve of a NH in a plane terrain. (Vruling=100kmph, Vmin=80kmph). Take the maximum value for “e” and “f”.

5. Describe Flexible pavement and it types. Also explain it’s failure criteria.

**(OR)**

6. Draw a neat sketch and explain the test procedure of California bearing ratio test.

7. Explain Rails and its types with neat sketch.

**(OR)**

8. Explain Rail gauge and describe the factors influencing in choosing it.

**Compulsory:**

9. Compare Railways with Roadways.