(OLD COURSE)   Q.P. Code : **4224**

(3 Hours)   [Total Marks : 100]

N.B. :   (1) Question No.1 is compulsory

(2) Attempt any four questions from remaining six questions.

(3) Assume appropriate data if necessary and state them clearly.

1.Solve any four : -   20

(a) State the function fulfilled by transition curve.

(b) What do you mean by scouring and how scour depth is determined.

(c) Differentiate between highway pavement and Airport pavement.

(d) Explain ESWL and the concept in the determination of the equivalent wheel load.

(e) Write short note on PCU and VDF

2.   (a) State the objectives of widening of pavement on horizontal curves? What are the.
         factors on which the design of widening depends. Explain   10

(b) Enlist different types of rigid pavement failures. Explain with neat sketches.   10

3. (a) Calculate the economic span.Also derive equation used stating assumption clearly.   10

Span (m)	4	8	12	15
Cost of girder (Rs)	1600	8000	14000	24000
Cost of one pier & foundation (Rs)	18000	20000	22000	28000

(b) Define :-   10

(i) Flakiness Index
(ii) Elongation index
     And also state the importance of that.

4. (a) Calculate the maximum permissible speed on a horizontal curve of radius 125m of a highway
    designed for a speed of 65km/hr to carry mixed traffic if the super elevation is not to exceed the
    Specifies value of IRC.   10

(b) Explain with the aid of neat sketches the methods of eliminating camber and introduction of
    super elevation.   10

(TURN OVER)

RJ-Con. 9362-15.

5. (a) What are the various test carried out on Bitumen. Explain all test in brief.　　　10

　(b) Write short note on :-　　　10

　　　　(i) 30th highest hourly volume.

　　　　(ii) Types of bearings used in bridge

6.　　(a) Explain in detail Geotaxtile & geogrid in highway .　　　10

　　(b) A National Highway passing through a rolling terrain has a horizontal　　　10
　　　　curve of radius 500mm Design length of transition curve assuming suitable data

7. Write short note on :-　　　20
　　i.　　Importance of highway maintenance
　　ii.　　Rotary Island
　　iii.　　Design steps for rigid pavement
　　iv.　　Regulatory signs

RJ-Con. 9362-15.