**Reg. No. :** | | | | | | | | | | |

# Question Paper Code: 31143

B.E. / B.Tech. DEGREE EXAMINATION, MAY 2017

Fourth Semester

Civil Engineering

01UCE403 – HIGHWAY ENGINEERING

(Regulation 2013)

Duration: Three hours Maximum: 100 Marks

Answer ALL Questions

PART A - (10 x 2 = 20 Marks)

1. What is CRF? What is its present status?
2. List the objectives of IRC Highway Research Board.
3. Express super elevation.
4. Define equilibrium super elevation.
5. List the components of flexible pavement.
6. Relate the purpose the contraction joints is provided.
7. Mandate the desirable properties of road aggregates.
8. Mention the type of joint filler material.
9. What is the purpose of pavement evaluation?
10. Name any four types of failures in rigid pavement.

PART - B (5 x 16 = 80 Marks)

11. (a) What are the different types of surveys to be carried out before commencing the new highway project and explain in detail. (16)

Or

(b) Describe the factors influencing highway alignment. (16)

12. (a) Describe the types of sight distance with neat sketch. (16)

Or

(b) Calculate the length of transition curve for a design speed of 80 *km/h* at a horizontal curve of radius 250 *m* in a rural area. Assume suitable data. (16)

13. (a) Briefly outline the methodology suggested by IRC, for the design of rigid pavement. (16)

Or

(b) Discuss the equivalent single wheel load. (16)

14. (a) Illustrate the construction of WBM Road with neat sketch. (16)

Or

(b) Describe any two methods of construction of penetration macadam road. (16)

15. (a) Explain any two common methods for the structural evaluation of flexible pavement. (16)

Or

(b) Enumerate various steps involved in a highway project formulation and explain the contents in each step. (16)

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