

Registration No :

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Total Number of Pages : 02

B. Tech.
RCI4C002

4th Semester Regular / Back Examination: 2021-22

TRANSPORTATION ENGINEERING

BRANCH(S): C&EE, CIVIL

Time : 3 Hour

Max Marks : 100

Q.Code : J464

Answer Question No.1 (Part-1) which is compulsory, any eight from Part-II and any two from Part-III.

The figures in the right hand margin indicate marks.

Part-I

- Q1 Answer the following questions : (2 × 10)
- a) What are the objectives of IRC?
 - b) What is map study?
 - c) What are the objectives of providing extra widening?
 - d) Define PIEV theory.
 - e) What is thirtieth highest design hourly volume?
 - f) Define level of service.
 - g) Differentiate between hydrophilic aggregate and hydrophobic aggregate.
 - h) Define vehicle damage factor.
 - i) Define WBM.
 - j) What is frost heaving in flexible pavement failure?

Part-II

- Q2 Only Focused-Short Answer Type Questions- (Answer Any Eight out of Twelve) (6 × 8)
- a) Briefly outline the classification of road based on location and function as suggested in the Nagpur road plan.
 - b) Discuss the second twenty year road plan of 1961-81 and its salient features.
 - c) Derive an expression for finding the extra widening required on horizontal curve.
 - d) What are the factors on which the stopping sight distance depends. Explain briefly?
 - e) The design speed of highway is 85 kmph. There is horizontal curve of radius 260m on a certain locality. Calculate the superelevation needed to maintain this speed. Assume any other data as per IRC.
 - f) Briefly explain the crushing test of aggregate.
 - g) What are the various use of Origin & Destination survey?
 - h) Briefly explain the ductility test of bitumen.
 - i) What are the object and scope of traffic engineering?
 - j) What are the different methods of carrying out traffic volume studies. Explain any one?
 - k) What are the various factors to be considered in pavement design?
 - l) What are the requirements of good highway drainage system?

Part-III

219 Only Long Answer Type Questions (Answer Any Two out of Four) 220

- Q3 Briefly explain the engineering surveys required for locating a new highway. (16)
- Q4 Briefly explain the procedure for design of flexible pavement as per IRC:37:2012. (16)
- Q5 Explain the various types of failures in rigid pavement and their causes. (16)
- Q6 What are the materials required for construction of Bituminous Macadam roads. (16)
- 221 Write down the construction steps for Bituminous Macadam road? 222

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