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JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -1 EXAMINATION- September 2018

B.Tech V Semester

COURSE CODE: 10B11CE511 MAX. MARKS: 15

COURSE NAME: Highway Engineering

COURSE CREDITS: 04 MAX. TIME: One Hr

Note: *All questions are compulsory. Carrying of mobile phone during examinations will be treated as case of unfair means. Assume any other missing data accordingly.*

Q1. How much camber is required on ODR with Water Bound Macadam in Heavy Rainfall Area? If the same road has horizontal curve of radius 1500 m with a design speed of 70 kmph, then explain with reasons what should be the superelevation? (2)

Q2. Derive an equation for finding the superelevation required if the design coefficient of lateral friction is 'f'. (2)

Q3. How is the expression for calculating the overtaking sight distance on a highway arrived at? Explain with neat sketch. (3)

Q4. Calculate the length of MDR in a district as per 2nd 20 year road development plan, with total area of 7200 km^2, developed, semi-developed and undeveloped areas being 30, 45 and 25% of the district. The number of towns with population over 1.0, 0.5-1.0, 0.2-0.5 and 0.1-0.2 lakhs are 3,7,12 and 20 respectively in the district. (3)

Q5. Write short note on- (3)

(i) Reconnaissance Survey

(ii) CRF

(iii) NTPC

(iv) Kerbs

(v) Road Margins

(vi) Head Light Sight Distance

Q6. Calculate the maximum allowable speed on a horizontal curve of radius 250 m, if the design speed is 100 kmph. (2)