

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -1 EXAMINATION- September 2016

B.Tech V Semester

COURSE CODE: 10B11CE511

MAX. MARKS: 15

COURSE NAME: HIGHWAY ENGINEERING

COURSE CREDITS: 04

MAX. TIME: 1Hr

Note: All questions are compulsory. Carrying of mobile phone during examinations will be treated as case of unfair means. Assume any necessary data suitably.

Q.1 A horizontal highway curve of radius 400 m and length 200 m is provided on the highway. Compute the set-back distances required from the centre line on the inner side of the curve so as to provide for-

- (a) stopping sight distance of 90 m
- (b) safe overtaking sight distance of 300 m

The distance between the centre line of the road and the inner lane is 1.9 m. (4)

Q.2 A valley curve is formed by a descending gradient of 1 in 25 meeting an ascending gradient of 1 in 30. Design the length of valley curve for a design speed of 80 kmph. Assume rate of change of centrifugal acceleration as 0.6 m/sec^3 , reaction time = 2.5 sec and $f = 0.35$. (4)

Q.3 Define superelevation. Discuss superelevation required for a highway with design speed of 80 kmph and radius of horizontal curve is 200 m. (4)

Q.4 Compare Nagpur Road Plan and Bombay Road Plan. (3)
