JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -2 EXAMINATION- April 2018

B.Tech VI Semester

COURSE CODE: 10B11CE614   MAX. MARKS: 25

COURSE NAME: Transportation Engineering

COURSE CREDITS: 04   MAX. TIME: 1.5 Hrs

Note: All questions are compulsory. Carrying of mobile phone during examination will be treated as case of unfair means.

Q1. Compare the different ballast materials with respect to merits, demerits and suitability of each material as a ballast. [CO1, CO2] (3)

Q2. Explain the following with the help of neat sketches-
   (i)   A left-hand turnout
   (ii)   Point and Splice Rails
   (iii)   Under cut Switches
   (iv)   Over riding switches   [CO1, CO3] (4)

Q3. Explain the necessity of widening of gauge on curves. If the wheel base of a moving vehicle is 4.12 m. The degree of curve is 5°, diameter of wheel is 1.5 m and flanges project 3.2 cm below the top rail. Determine extra width required on curve. [CO2] (3)

Q4. On a B.G. track, the speed by railway board's speed formula: $V_s = 4.35 (R-67)^{0.5}$ is 1.25 times the maximum permissible speed obtained by cant formula, after allowing the maximum cant deficiency. If actual cant provided is the equilibrium cant for an average speed of 60 kmph. Calculate- (1) Radius in meter (2) Maximum speed (3) cant to be actually provided [CO2] (3)

Q5. Write short note on-
   (i)   Detonating Signal,
   (ii)   Co-acting Signal   [CO1, CO2] (3)

Q6. Explain the various items and procedure of maintaining a-
   (i)   Railway Bridge
   (ii)   Gauge   [CO1, CO3] (3)

Q7. "Marshalling yards are the heart that pumps the flow of commerce along the tracks and they may too, without eternal vigilance, become the graveyard of wagons"
Simplify the statement.   [CO1] (3)

Q8. What do you understand by Negative Superelevation? When from a layout of B.G. yard, a 8° curve branches off from a 4° main curve in an opposite direction. If speed is restricted to 28.95 kmph then determine the speed restriction on the mainline. [CO1, CO2] (3)