R09

Code No: 09A60105
JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
B.Tech III Year II Semester Examinations, November/December – 2013
TRANSPORTATION ENGINEERING
(Civil Engineering)

Time: 3 hours   Max. Marks: 75

Answer any five Questions
All Questions carry equal marks

1.a) Describe any four road network patterns with advantages and disadvantages.
 b) Explain the need based planning for road projects initiation.   [7+8]

2.a) Describe various design controls and its criteria in providing Highway Geometric design.
 b) Explain various sight distance elements considered for calculation of stopping sight distance.   [7+8]

3.a) Derive an expression for finding the super elevation required if the design coefficient of lateral friction is 'f'. Design the super elevation required at a horizontal curve of radius 270 m for the design speed of 120 kmph.
 b) Discuss various factors considered while designing the length of transition curve? Design the length of transition curve for a two lane two way highway for the design speed of 95 kmph and radius of curve is 290m in heavy rain fall area.[7+8]

4.a) How do you carryout traffic volume study for a National Highway? Write the procedure for presentation of traffic data. Explain the significance of thirtieth highest hourly volume.
 b) Calculate the 98th and 85th percentile speed from the following spot speed data and also write the importance of the above speeds.   [7+8]

Mid speed	15	25	35	45	55	65	75	85	95
No. of vehicles	0	12	19	38	33	25	16	13	5

5.a) Describe the main objectives of traffic regulation and management?
 b) What are the various types of road markings available as per the IRC in road safety and traffic regulation? Explain with neat sketches?   [7+8]

6.a) Explain the design procedure and standards for rotary intersection design as per IRC.
 b) How do you orient the runway? Explain the procedure for orientation of runway in the form of wind rose diagrammes with neat sketches.   [7+8]