

**III B.Tech II Semester Supplementary Examinations, April/May 2005**  
**TRANSPORTATION ENGINEERING**  
**(Civil Engineering)**

**Time: 3 hours****Max Marks: 80**

**Answer any FIVE Questions**  
**All Questions carry equal marks**

\*\*\*\*\*

1. (a) what are the various methods of classifying roads? Briefly outline the classification based on location and function as suggested by Nagpur road plan.  
(b) Briefly explain the engineering surveys needed for locating a new highway.
2. (a) Explain the following:
  - i. gradients
  - ii. vertical curves
  - iii. camber.(b) Calculate the extra width of pavement required on a horizontal curve of radius 700m one two line highway, the design speed being 80kmph. Assume wheel base  $l = 6\text{m}$ .
3. (a) Enumerate the various types of intersections and the basic principles involved.  
(b) With neat sketches show the various types of traffic signs classifying them in proper groups.
4. (a) Explain the desirable properties of aggregates to be used in different types of pavement-constructors.  
(b) Explain the western guards method of pavement design.
5. (a) Enumerate the steps in the construction of cement-concrete pavement. Give the specifications of materials used.  
(b) Write short notes on:
  - i. Bituminous concrete
  - ii. Real coat
  - iii. Joints in C-c roads.
6. (a) What are various types of rail defects? How do you identify them.  
(b) What are various types of sleepers. Explain them in details bringing out their merits and demerits.
7. (a) How the length of the transition curve is calculated.  
(b) Determine the length of T.C for B.G. Track having  $4^\circ$  curve and a 80 mm cant. The maximum permissible speed is 80 kmph.
8. (a) Draw a neat sketch of a marshalling yard. Explain the function of each component.

- (b) Give the classification of signals.
- (c) Explain the principle of interlocking.

★ ★ ★ ★ ★