BENGAL ENGINEERING AND SCIENCE UNIVERSITY, SHIBPUR
B.E. (Civil) 6th Semester Final Examination 2012
Transportation Engineering- II (CE-606)

Time: 3 Hours.   Full Marks: 70

Use separate answer script for each half
Assume data reasonably if required

FIRST HALF

Answer Q.No.1 and any TWO from the rest

1. Write short notes on (Any three)   [3x5=15]

   a) Semaphore signals

   b) Single slip and Double slip

   c) Function of slide chairs, stretcher bars and gauge tie plate in the switches of a turnout

   d) Factors affecting the choice of gauge. Coning of wheels and its effects on rail

   e) Objectives of signaling

2. a) Discuss the properties required of ballast for a railway track.

   b) Determine the optimum thickness of the stone ballast required below the wooden sleepers of density M+7 on a BG track.

   c) Explain the term 'Composite sleeper index'. Write the specifications prescribed by Indian railway system.   [4+3+3]

3. a) Explain the merits of concrete sleepers over the steel sleepers.

   b) Why flat-footed rails become popular compare to other types of rail section? Give reasons.

   c) Explain advantages and disadvantages of coning of wheels   [4+3+3]

4. a) Two M.G. tracks cross each other at an angle of 1 in 10. Calculate the important dimensions of the diamond crossing.

   b) Calculate the various elements for B.G. track turnout for a crossing No. 1 in 8.5 and heel divergence of 12 cm.   [4+6]

SECOND HALF

(Answer Q. No. 5 and any TWO from the rest.)

5   Write short notes on <u>any three</u> from the followings   [3 X 5 = 15]
   a)   Time mean speed and space mean speed.
   b)   Greenshield's macroscopic traffic stream model.
   c)   Capacity and LOS
   d)   Purpose of channelization.
   e)   Classification of road signs.

6   What is airport configuration? State the basic airport configuration. What is wind rose diagram? Discuss how wind rose diagram can be used for runway orientation.

                                                                    [2+2+2+4]

7   a) What is the separation criteria for taxiways based on ICAO recommendation? State how width of taxiway may be decided for geometric design.

b) What is balance point? State the fundamental principles for location of exit taxiways.

[4+2+2+2]

8   a) Define grade separated interchange. Write down the names of common types of interchange.

b) A four leg intersection is proposed to be converted to traffic rotary. The width of the approach is 12m. Table below shows the traffic from the four approaches of the intersection. Find out the capacity of the north east weaving section. The other data if required may be assumed as per IRC code.

Approach	Left turn	Straight ahead	Right turn
North	400	700	300
South	350	370	420
East	200	450	550
West	350	500	520

[2+2+6]