

Total No. of Questions : 8]

[Total No. of Printed Pages : 2

Roll No

CE-5001 (CBGS)**B.E. V Semester**

Examination, December 2017

Choice Based Grading System (CBGS)**Transportation Engineering***Time : Three Hours**Maximum Marks : 70*

- Note:* i) Total No. of questions are eight, attempt any five questions.
 ii) All questions carry equal marks.
 iii) Assume suitable missing values.

1. a) Explain different types of rail sections used on BG and MG tracks in India with neat sketch. 7
 b) What is point and crossing? Sketch a right hand turnout and show its various components. 7
2. a) Discuss the different types of sleepers used in Indian railways and state relative merits and demerits of each. What would be the expression for sleeper density if the rail length used in a track is 19m and there are 22 sleepers under one rail length? 7
 b) What do you understand by coning of wheels and creep of rails? Explain in detail. 7
3. a) What is the ballast in permanent way? Describe the functions of ballast and state the requirements of a good ballast material. 7
 b) What is equilibrium cant? Derive an expression for it. Explain the cant deficiency. 7

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4. a) Discuss in detail different types of foundation used for bridge. Explain any one in detail. 7
 b) What is meant by "Economical span" for a bridge? What are the factors on which the selection of a loading types depends in case of bridge design. 7
5. a) Explain the various components of bridge sub structure and super structure with neat sketch. 7
 b) Write short notes on any two: 7
 i) IRC class "A" loading
 ii) Scour depth
 iii) Afflux
6. a) What is coffer dam and its use? Name and explain any two types coffer dam? 7
 b) What do you mean by strengthening of bridge? Name any two methods of strengthening of a bridge. 7
7. a) What is the function of mucking operation, lining, drainage and ventilation in tunnels. Describe in brief. 7
 b) Give details for the route selection of tunnels. Describe briefly the different types of tunnels usually preferred railways. 7
8. a) Explain in detail in land water operations. 7
 b) Write detail notes on any two: 7
 i) Wet docks
 ii) Anchoring location
 iii) Operational Tidal data

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