*Total No. of Questions : 10]* *[Total No of Printed Pages :2*

Roll No 05106E111027



# CE - 302

## B.E. III Semester

Examination, December 2012

## Transportation Bridges and Tunnels

*Time : Three Hours*

*Maximum Marks : 70/100*

*Note: 1. All questions carry equal marks.*
*2. Attempt any five questions selecting one from each unit.*
*3. Assume suitable data if found missing.*

### Unit - I

1. a) Discuss the various types of TRACTIVE RESISTANCES which a locomotive has to overcome on a railway track.
   b) Explain the various factors affecting selection of RAILWAY ALIGNMENT.

OR

2. a) Draw, neat sketches of different types of RAILS. Explain merits and demerits of each.
   b) Name the different types SLEEPERS. Explain any two in detail.

### Unit - II

3. a) A 6 degree curve branches off from a 3 degree main curve in an opposite direction in a B.G. yard. The speed limit on branch line is 36KMPH. Find out the speed limit of main line if permitted DEFICIENCY IN CANT is 7.6 cm.
   b) Derive an expression for finding SUPER ELEVATION on a railway track.

OR

4. a) Draw a neat sketch of MARSHALLING YARD. Explain its working.

   b) Draw a neat sketch of RIGHT HAND TURNOUT. Explain its working.

## Unit - III

5. a) How will you select a suitable ALIGNMENT of BRIDGE?

   b) Write a note on

   (i) ECONOMICAL SPAN

   (ii) CLEARANCE.

OR

6. a) Explain the different types of ROAD BRIDGES through neat sketches.

   b) Discuss the different loads and forces acting on bridges.

## Unit - IV

7. a) Discuss PILE and WELL foundation through neat figures.

   b) How materials are selected for different bridges?

OR

8. a) Discuss EQUIPMENTS and PLANTS required for ERECTION of bridges.

   b) Explain the different reasons of BRIDGE FAILURE.

## Unit - V

9. Discuss in detail different methods of construction of tunnel in soft soil, giving neat sketches.

OR

10. Write short notes on :

    i) Types of LINING.

    ii) Drainage of tunnel

    iii) Shafts

    iv) Tunnel approaches.

*******