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SF-8322

B. E. III (Sem. VI) (Civil) Examination

May/June – 2011

Railway, Bridge & Tunnel Engineering

(New Syllabus)

Time : **3** Hours] [Total Marks : **100**

Instructions :

(1)

નીચે દર્શાવેલ ☛ નિશાનીવાળી વિગતો ઉત્તરવહી પર અવશ્ય લખવી.
Fillup strictly the details of ☛ signs on your answer book.

Name of the Examination :

☛ **B. E. III (Sem - VI) (Civil)**

Name of the Subject :

☛ **Railway, Bridge & Tunnel Engineering (NEW)**

☛ Subject Code No. : **8 3 2 2** ☛ Section No. (1, 2,.....) : **NIL**

Seat No. :

Student's Signature

(2) Attempt all questions as per instructions given.

(3) Figures to the right indicate full marks.

(4) Draw neat and labelled sketches.

(5) Assume suitable data if necessary. Write it clearly in answer book.

1 (a) Write in brief : (any four) **10**

(1) Suggest suitable rail section for a locomotive carrying an axle load of 29.12 t.

(2) Write explanation for : RBS-90R-TISCO-X2002-OB

(3) Types of gauge in indian railways.

(4) Uses of loading gauge.

(5) Cant/superelevation for railway track.

(6) Purposes of interlocking.

(b) Explain about gauntletted track with sketch. **5**
Also, write salient features of it.

OR

(b) Write classification of signals. Describe semaphore signals.

2 (a) Sketch permanentway on embankment for double track with labelling. **15**

(b) Explain causes and effects of creep of rails.

(c) Discuss about various forces acting on track.

OR

(c) Discuss about resistance to traction.

3 Write short notes : (any four) **20**

(1) Junction and terminal station

(2) Marshalling yards

(3) Track fittings

(4) Diamond crossing

(5) Types of gradient

(6) Types of sleeper.

4 (a) Explain steel arch bridge with a neat sketch. **5**

OR

(a) Explain truss bridge with a neat sketch. **5**

(b) Write a short note on maintenance of bridge. **5**

OR

(b) What are the diff. emperical methods of flood estimation ? Explain any one in detail. **5**

(c) Write a short note on scour depth and economic span. **5**

OR

(c) Mention advantages and disadvantages of suspension bridges. **5**

(d) Write a short note on joints of bridges. **5**

5 (a) Explain different components of a bridge. What are the requirements of an Ideal bridge. **5**

OR

(a) Write a short note on erection steps of RCC and prestressed girder bridges. **5**

(b) Write a short note on finding out safe bearing capacity of an existing bridge. **5**

OR

(b) Write in detail about the procedure of strengthering of masonry arch bridges. **5**

(c) Define movable bridge. Explain with neat sketch lift bridge. **5**

OR

(c) Explain method of erection of suspension bridge. **5**

6 Write short notes on : (any three) **15**

(1) Drainage of tunnel

(2) Full face method is tunneling

(3) Tunnel ventilation

(4) Advantages and disadvantages of tunnel

(5) Heading and bench method in tunneling.
