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Total No. of Pages : 2

Seat No.	
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B.E. (Civil) (Semester - VIII) Examination, May - 2014
DESIGN OF BRIDGES (Elective - III) (Revised) (New)

Sub. Code : 49187

Day and Date : Saturday, 24-05-2014

Time : 2.30 p.m. to 5.30 p.m.

Total Marks : 100

- Instructions :**
- 1) Solve any two questions from each section.
 - 2) Figure to the right indicates full marks.
 - 3) Assume suitable data if necessary.

SECTION - I

- Q1) a)** Explain with figure various components of bridges. [9]
- b) Discuss in detail various maps and information to be included in preliminary drawings for investigation for bridges. [8]
- c) Explain the importance of bridges. [8]
- Q2) a)** Write down IRC specification for width of carriageway and clearances for bridges. [9]
- b) Write a note on IRC specifications.
- $\frac{\text{Class AA}}{\lambda}$ For λ Live load due to tracked vehicle and wheeled vehicle. [8]
- c) Write a note on impact allowance for class A, class B and IRC class AA loading. [8]

P.T.O.

Q3) Design deck slab for a state highway bridge with following data for class AA tracked vehicle. Check for shear.

Width of bridge 12 m.

No footpath provided.

M 25: Steel Fe 415 grade.

Clear span 5.0m.

Depth of foundation 1.35m.

Wearing course 56 mm thick asphaltic concrete.

$T_c = 0.28$ MPa.

[25]

SECTION - II

- Q4)** a) Write a note on abutments. [9]
b) What are the advantages of pneumatic caisson over an open caisson with sinking of pneumatic caisson. [8]
c) Explain erection method for bridge deck construction by cantilever method. [8]
- Q5)** a) How will you classify inspection of bridges? Explain common defects and their locations. [13]
b) Explain various forces acting on piers from design consideration. [12]
- Q6)** a) What are various types of bearings? explain elastomeric bearing in detail. [13]
b) Expansion joints one important structural elements Justify. [12]

