

BACHELOR OF ARCHITECTURE EXAMINATION, 2012

(2nd Year, 2nd Semester)

STRUCTURE FOR ARCHITECTS

Time : Three Hours

Full Marks - 100

Answer **any Four** questions from the following

1. Write notes on any **one** of the following and explain with the help of sketches :
 - a) Shell structures used in architecture,
 - b) Bamboo Structure used in architecture. 25

2.
 - a) Write short notes on the following :
 - i) "TMT" bars used in RCC structures nowadays.
 - ii) Cube test of concrete. 5+5

 - b)
 - i) Mention the commonly used standard diameters of steel reinforcing bars in reinforced concrete up to dia 25 mm. 4

 - ii) Find out, in a short-cut way, the values in kg/m of all standard diameters of reinforcing steels that you have mentioned above (assume that the weight of 18 mm dia. reinforcing steel is 2.0 kg/m). 7

[Turn over

- iii) What should be the cover for reinforcements in RCC works in slabs, beams, columns and foundations? 4
4. Based on the several Earthquake Tips jointly prepared by the IIT-Kanpur and Building Material and Technology promotion Council write notes on any two of the following : 12.5x2
- i) What are Magnitude and Intensity of Earthquake?
- ii) How Architectural Features Affect during earthquake?
- iii) How to make building ductile for Good seismic performance?
5. a) Give tentative figures and charts (in tabular forms only) that are normally used in common RCC drawings for (G+4) residential apartment buildings of middle-income groups showing (i) tables for (i) beams, (ii) columns and (iii) strip foundation (for commonly found Kolkata soil)
- (Note : As calculations are not used, only tentative representation is required giving apparently viable values).** 25

6. a) What is the name and number of the IS Code for practice related to Plain and Reinforced Concrete? 4
- b) Based on that Code narrate about the following provisions : 7x3=21
- i) Arrangement of reinforcements in RCC structural elements
- ii) Arrangement of transverse reinforcement with drawings
- iii) Expansion joints