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BAR-014

BACHELOR OF ARCHITECTURE

00285

Term-End Examination

June, 2012

BAR-014 : THEORY OF STRUCTURES - II

Time : 3 hours *Maximum Marks : 70*

Note : *Question No. 1 is **compulsory**. Answer **any four** questions from the remaining questions. Use of calculator is **permitted**.*

1. Choose the most appropriate answer from the options given in questions (a) to (g) : **7x2=14**

(a) compared to beams, arches would normally require :

(i) less reinforcement

(ii) more reinforcement

(iii) same amount of reinforcement

(iv) double the reinforcement

(b) Which of the following supports would absorb any action coming towards it ?

(i) Fixed (ii) Hinged

(iii) Pinned (iv) Roller

(c) Method of joints may be applied to trusses, which have :

(i) Pinned joints

(ii) Rigid joints

(iii) Welded joints

(iv) None of the above

(d) Bearing walls in buildings are normally made of :

(i) Steel (ii) Bricks

(iii) Tiles (iv) Timber

(e) A cantilever of length 'L' is subjected to a UDL of intensity 'w' per unit length over its whole length. The shear force near to the support shall be :

(i) $wL^2/2$ (ii) $wL/2$

(iii) wL (iv) $wL^2/8$

(f) For the cantilever in question (e) above, the bending moment at the free end would be :

(i) $wL^2/8$ (ii) $wL^2/2$

(iii) $wL^3/364$ (iv) Zero

(g) Which of the following are used for vertical transportation ?

(i) Doors (ii) Windows

(iii) Walls (iv) Staircase

2. (a) Discuss the nature of the basic structural system in a reinforced concrete framed building, briefly. 7

(b) Discuss how a ductile material of construction may perform better, against impact loads, in comparison to a brittle material. 7

3. (a) Describe, briefly, as to how a brick masonry arch in a wall bears load coming on it. 7

(b) Describe use of a lintel in general building construction. 7

4. (a) Explain why pin jointed trusses are made of triangular portions ? 7

(b) What are determinate structures ? Explain briefly. 7

5. (a) What are simple geometric forms ? Describe briefly. 7

(b) Differentiate between Cuboidal and prismatic forms. 7

6. (a) Discuss ***any two*** important considerations in the construction of bearing wall systems from a structural view point. 7

(b) Discuss working out structural systems for small buildings briefly. 7

7. Write short notes on ***any two*** of the following : **2x7=14**

(a) Purpose of foundations for structures

(b) Precautions to be taken in the construction of domes

(c) Use of columns in general building construction.