## **BACHELOR OF ARCHITECTURE (B.ARCH)**

## Term-End Examination December, 2012

## BAR-004 : THEORY OF STRUCTURES - I

Time : 3 hours

00303

Maximum Marks: 70

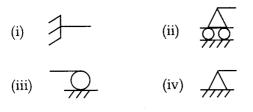
**Note :** Question No. 1 is compulsory. Answer any four questions from the remaining questions.

- Choose the most appropriate answer from the options given in questions (a) to (g) below : 2x7=14
  - (a) How many reactions does a fixed support in a space structure have ?

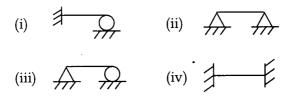
(i)	3	(ii)	4
(iii)	5	(iv)	6

- (b) Which of the following supports do not/does not offer any resistance against rotation ?
  - (i) Fixed support
  - (ii) Hinged support
  - (iii) Fixed as well as hinged support
  - (iv) None of the above

(c) Identify a hinged support out of the following ones :



(d) Identify a simply supported beam :



(e) Force/Area is termed as :

- (i) Strain (ii) Stress
- (iii) Modulus (iv) Foundation
- (f) Determination of internal actions in structures is considered in :
  - (i) Analysis
  - (ii) Design
  - (iii) Drafting
  - (iv) None of the above
- (g) Mild steel is :
  - (i) ductile
  - (ii) brittle
  - (iii) both the above
  - (iv) none of the above

**BAR-004** 

2

2.	(a) (b)	Define the term 'Strain' with an example. Discuss what do you normally expect from a structural system. Write briefly.	7 7		
3.	(a)	What do you understand by 'Man made forms' ? Describe briefly.	7		
	(b)	Write any two important functions of a structure. Explain them briefly.	7		
4.	(a)	Differentiate between 'Dead load' and 'Live load'.	7		
	(b)	Discuss what do you understand by a 'Uniformly Distributed Load'.	7		
<b>5.</b>	(a)	What is meant by 'Factor of safety' ? Write any two factors affecting it.	7		
	(b)	Discuss why stability is important for any structure ?	7		
6.	(a)	What do you understand by 'Primary elements' in a structure ? Discuss briefly.	7		
	(b)	Discuss the nature of wind load briefly.	7		
7.	Writ	Write short notes on <b>any two</b> of the following : 7x2=14			
	(a)	Forces of nature			
	(b)	Effects of temperature variation in structures			
	(c)	Criterion for design			

**BAR-004** 

3