

**B.ARCH. Pt. –I, FIRST SEMESTER EXAMINATION - 2011**  
**Materials and Methods of Construction – I (Ar- 102)**

Full Marks – 70

Time- 3 hours

**Instructions**

- Answer **Question No. 9** and **any Five (5)** from the rest.
- Answer one full question at one place. Mixed up answers will not be evaluated.
- Answers must be brief and relevant. There is no negative marking.
- Illustrate your answers wherever necessary.

1. Draw a neat labeled sketch of a standard size burnt brick showing necessary measurements. Describe the physical properties of a First Class brick. What happens when Alkaline Salts are present in excess in the clay used for bricks?  
3+6+3=12
2. What is Terracotta? How Terracotta is commercially prepared? Describe the salient properties of 'polished Terracotta'.  
2+5+5=12
3. Compare the respective characteristics of Igneous, Sedimentary and Metamorphic Rocks. How can you protect stone masonry from 'sulphate attacks'? Draw sketches of 'Tooled' and 'Vermiculated' stone masonry surfaces.  
6+2+4=12
4. Why Timber is 'seasoned' before its use? How seasoning is done in commercial scale? How 'Particle Boards' and 'Block Boards' are manufactured ?  
4+4+4=12
5. What is 'Cement'? What is the composition of ordinary 'Portland' cement? What do you understand by the term 'grades of cement'? Why a fixed Cement-Water ratio is maintained in concrete mixing?  
2+4+3+3=12
6. Name the most commonly used non-ferrous metal used in building industry. What are the possible areas of its use in building industry? What are its major advantages and disadvantages? What is 'Anodizing'?  
2+3+4+3=12
7. What is 'Glass'? How ordinary 'sheet glass' is industrially manufactured? What is 'Annealing' of glass? Identify the possible application areas of 'crown glass', 'flint glass' and 'pyrex glasses'?  
2+4+3+3=12
8. Describe the followings : Ordinary MS Reinforcement bars, TOR steel bars and TMT bars. What is 'Galvanizing' of steel? What do you understand by the specifications ISNT 125 @ 268.8 N/m and ISLB 500 @ 735.7 N/m ?  
6+3+3=12
9. Answer **any five** from the following:  
5x2=10
  - i) Where Mohs scale is used?
  - ii) How hard wood is visually identified?
  - iii) What is a 'Veneer'?
  - iv) Which chemical is called the 'glass maker's soap'?
  - v) Write the chemical formula of 'concreting action'.
  - vi) What is 'stainless steel'?
  - vii) What is 'adobe' and what is its compressive strength?
  - viii) What does 'M-20 concrete' means?