B. Arch Part-I First Semester Final Examinations -2012
Materials & Methods of Construction-I (Ar-102)

Full Marks : 70 **Time: 3 hours**

- **Answer Any Five (5) questions.**
- **All questions carry equal marks (5x14=70)**
- **Answer one full question at one place.**
- **Your answers must be illustrated with appropriate sketches wherever required.**

1. What are the main ingredients of 'Clay'- used for manufacturing of good quality bricks and why such ingredients are used? Describe the key properties of 'first class bricks'. Draw two neat labeled and proportionate sketches of 'Modular' bricks and Bull-nose brick. 6+4+4=14
2. What is the difference between 'rock' and 'stone'? Describe important properties of commom building stone. How 'Sedimentary' and 'Metamorphic' rocks are formed? What is the 'Victoria Stone'? 2+ 5+5+2=14
3. Why seasoning is necessary before use of timber? Describe any two commercial methods of seasoning timber. What type of preservatives is used to protect timber from 'rotting'? Describe key properties of 'Ply-wood'. 3+6+2+3=14
4. Why use of non-ferrus metal like 'Aluminum' is gaining popularity in the building industry? What are its key advantages over other metals? How colour coating and anodizing of aluminum is done and why? 4+4+6=14
5. Describe the material properties of ordinary mild steel, high carbon steel and high tensile steel – used in building industry. What are TOR steel bars, TMT bars and MS steel bars? Draw sketches of common rolled steel sections used in construction industry. 6+4+4=14
6. What is 'concrete'? What are its main ingredients? What are the key elements of 'Portland' Cement'? What do you understand from the terms '33 Grade Cement', '43 Grade Cement' and '53 Grade Cement'? 2+2+4+6=14
7. Draw neat labeled and proportional sketches of **any two** of the following: 7+7=14

(a) Flemish Bond, English Bond and Basket Pattern of Brick Laying
(b) Key defects of timber
(c) Tooled; Picked; Punched and Hammer dressed Stone surfaces

8. Write Short Notes on **any three** within 100 words: 14

(a) Efflorescence in Bricks
(b) Cementation Process
(c) Commercial Block board
(d) Galvanizing of steel
(e) Annealing of Glass