Ref. No. EX/ARCH/T/113/2018(S)(OLD)

B.Arch. Examination, 2018(S) (OLD)

(1st Year, 1st Semester, Supplementary Exam, 2018(s)(OLD)

MATERIALS AND METHODS OF CONSTRUCTION-I

Full Marks: 100 Time: Three Hours

The figures in the margin indicate full marks

Answer to any 5 questions, All questions carry equal marks

1. (i) Explain bonding in brick masonry and its various techniques. Illustrate with Sketches. 10
   (ii)Explain Ultimate strength, ductility, stiffness, toughness and elasticity from a Stress- Strain diagram of concrete. 05
   (iii) What is the difference between plastering and pointing? 05

2. (i) Define seasoning of stone and its importance in construction. 5
   (ii) Explain physical classification of rocks with examples and their use. 10
   (iii) Highlight the characteristics and application of the following stones in building construction : Granite, Slate, Sandstone, Mooram & kota stone 5

3. (i) Why is gypsum added in cement manufacturing process ? 5
   (ii) What is rapid hardening cement? What is responsible for its high early strength. 5
   (iii) Differentiate between OPC, PPC and PSC cement and the advantages of PPC cement over OPC cement. Make sketches if necessary. 10

4. (i) Differentiate between dry rots and wet rots ? How are they caused and prevented. 5
   (ii) What is seasoning of timber and why is it done? 5
   (iv) How are trees classified based on its mode of growth? Give two examples of each and their uses as building materials. 10

5. (i) How can we classify lime ? Explain their characteristics and their use. 10
   (ii) Define the term puzzolana and various artificial puzzolanas used as building materials. 10

6. Differentiate between the followings (Any 4) (4x 5=20)
   (i) Fine Aggregate & Coarse Aggregate
   (ii) Bulking and Soundness in agrregates
   (iii) Grouting and Guniting.
   (iv) First class and fourth class bricks
   (v) burnt bricks and sun dried bricks

7. (i) What are the constituents of good brick-earth ? 5
   (ii) Sketch and state the uses of king closer, coping brick, bull nose brick and quoin closer. 10
   (iii) What are the differences between common bricks and engineering bricks? 5

8. (i) Draw the plans , elevation and isometric view for a T joint brick masonry in English Bond. (Size of brick 250mm x 125mm x 75mm) 10
   (ii) Define Green Building Materials? Explain their various properties and uses in building construction. 10