

B.Arch. Engg. Examination, 2017**(1st Year, 2nd Semester)****MATERIALS AND METHODS OF CONSTRUCTION-II**

Full Marks: 100

Time: Three Hours

The figures in the margin indicate full marks

Question No.1 is compulsory and to answer any 5 (five) from the remaining questions

- Q1. Write short notes on (any 5) (5x2 =10)
- (a)
- i. **Hennebique** system of construction with sketches
 - ii. **Corten** steel, its use areas and importance?
 - iii. Hydration process of PPC cement showing all chemical reactions.
 - iv. Castellated beams and its importance in construction
 - v. Workability of concrete and its measuring unit.
 - vi. M15 concrete and what does the 28-day compressive strength mean?
- (b)
- i. Why is ETFE better than PTFE? Give reasons? 5
 - ii. Explain the use of Cast iron and wrought iron in a dome construction with steel. 5
 - iii. Difference between Cast Iron, Wrought iron and Steel based on its carbon content. 5
- Q2. (i) Explain the process of making tempered glass? 3
- (ii) Explain the main types of Annealed glass and Tempered glass with their uses. 6
- (iii) Explain the terms SHGC, VLT and LSG and their applications. 6
- Q3. (i) Define cement clinkers and highlight their importance. 6
- (ii) Differentiate between OPC, PPC and PSC cement and the advantages of PPC cement over OPC cement. Make sketches if necessary. 6
- (iii) Why is gypsum added in cement manufacturing process? 3

- Q4. (i) Explain the types of plastics below and their uses in building construction. 5
a. Phenol resins b. Plastomers & Elastomers
- (ii) Explain different types of Reinforced Plastics, their types and uses? 4
- (iii) Difference between PVC, UPVC and CPVC with examples and their uses in building Industry. 6
- Q5. (i) What are the different types of paints used for internal and external works in building construction? 6
- (ii) What are varnishes? Explain their use in the building industry. 4
- (iii) What are primers and in what situations do you use them? 5
- Q6. (i) What do you mean by Eminently hydraulic lime, Fat lime and Hydrated lime. 6
- (ii) Define the term Puzzolana and various artificial puzzolanas used as building materials. 5
- (iii) Define slaking of lime and its importance. 4
- Q7. (i) Define Acoustic materials and give 3 examples of acoustic materials and their uses. 5
- (ii) Name the materials you would suggest for Heat insulation in buildings and their use areas. 5
- iii. What do you mean by Green Building Materials? Explain with examples. 5
- Q8. (i) Draw the plan and sections for 3 different types of Doors with proper labeling. 7.5
- (ii) Draw the plan and section of an external wall of a building showing the foundation, Plinth, Sill, Lintel and Roof Details. 7.5
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