

B.Arch. Examination, 2023

(1st Year, 2nd Semester)

Materials & Methods of Construction-II

Full Marks:100

Time: Three Hours

The figures in the margin indicate full marks

Question No.1 is compulsory and answer any five from the remaining questions

1. (a) **Fill in the Blanks (1x10=10)**
- i. Hydraulic lime contains _____% of alumina, silica and ferric oxide as impurity.
 - ii. Calcined clay products are a type of _____.
 - iii. The maximum bulking of sand is likely to occur at a moisture content of _____%.
 - iv. Wrought iron is fibrous in character due to presence of _____ during pounding.
 - v. Natural glass formed by volcanic action is called _____.
 - vi. UPVC stands for _____.
 - vii. In oil paints, the most commonly vehicle used is _____.
 - viii. In Fe 500 grade of steel, 500 represents _____.
 - ix. The Mix ratio of M15 grade is _____.
 - x. Rock wool and Glass wool is used as _____ insulating materials.
- (b) **Write Short Notes on: (Any 3) (5 marks Each)**
- i. Heat Insulating Materials
 - ii. Sound Insulating Materials
 - iii. Corten Steel, its use and its importance
 - iv. Reinforced cement concrete
2. (i) How is glass made transparent? 3
- (ii) Explain the main types of annealed glass and tempered glass with their uses. 6
- (iii) Briefly explain the Float Glass Manufacturing process with necessary diagram. 6

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| 3. | (i) Differentiate between Thermoplastics and Thermosetting plastics. | 4 |
| | (ii) Explain PTFE and ETFE, and their uses in building construction. | 6 |
| | (iii) Explain the different uses of Phenol resins and Amino Resins | 5 |
| 4. | (i) How is steel classified based on its application? | 8 |
| | (ii) What are TMT Bars? How is it different from Mild Steel Bars? (2+2) | 4 |
| | (iii) Differentiate between Wrought iron, Cast iron and Steel based on carbon percentage. | 3 |
| 5. | (i) Briefly highlight the use of Cement paints, Aluminum paints and Bituminous paints. | 3 |
| | (ii) What are varnishes? Explain their uses in the building industry. | 4 |
| | (iii) Explain different ingredients of oil Paints and their functions. | 8 |
| 6. | (i) What is lime? Explain the process of calcination to get lime. (2+3) | 5 |
| | (ii) What is slaking of lime? Why is it important? | 4 |
| | (iii) Differentiate between hydrated lime and hydraulic lime with examples. | 6 |
| 7. | (i) Differentiate between compressive strength and characteristic strength of concrete. | 4 |
| | (ii) Define workability in concrete and briefly explain slump test for workability. | 5 |
| | (iii) What are the various types of concrete used in building industry? | 6 |
| 8. | (i) Briefly explain with sketches 2 types of Bearing Joint in wooden joinery. | 6 |
| | (ii) Differentiate between oblique and corner joints in wooden joinery with examples. | 6 |
| | (iii) Differentiate between Butt joint and Rebated Joint. | 3 |