

B.Arch. Engg. Examination, 2019

(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 answer any five from the remaining questions

- (a)
- (i) The crudest form of iron is
(a) mild steel (b) pig iron (c) wrought iron (d) cast iron
- (ii) For proper workability the w/c ratio varies from _____.
- (iii) FRC stands for _____
- (iv) Which of the following types of steels is used in the manufacture of rails?
(a) Mild steel (b) Manganese steel (c) Cast steel (d) Bessemer steel
- (v) The Crystal Palace in England was made with _____ iron.
- (vi) Which of the following glass is most suitable to withstand high temperatures?
(a) soda-lime glass (b) lead glass (c) boro-silicate glass (d) tempered glass
- (vii) UEPVC stands for _____
- (viii) _____ glass is made from plate glass by reheating and sudden cooling and is 3 to 5 times stronger than plate glass.
- (ix) The temperature at which a particular plastic changes from flexible to rigid is known as _____
- (x) _____ is added in UPVC to produce a shiny surface. 10
- (b)
- (i) Explain with sketches the use of cast iron and wrought iron in a dome construction with steel. 5
- (ii) Explain PTFE, ETFE and its use in building construction. 5
- (iii) Explain Castellated Beam, its use areas and importance. 5
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2. (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

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| 3. | (i) Differentiate between Thermoplastics and Thermosetting plastics. | 6 |
| | (ii) Define different types of Elastomers their types and uses? | 4 |
| | (iii) Explain the different uses of UPVC & CPVC in building industry. | 5 |
| 4. | (i) What do you mean by DPC and why is it important. | 5 |
| | (ii) What is a lintel and why is it required? | 5 |
| | (iii) Explain the difference between sub structure and super structure? | 5 |
| 5. | (i) Why is gypsum added in cement manufacturing process ? | 3 |
| | (ii) What is rapid hardening cement? What is responsible for its high early strength. | 4 |
| | (iii) Differentiate between OPC, PPC and PSC cement and the advantages of PPC cement over OPC cement. Make sketches if necessary. | 6 |
| | (iv) Explain how cement gains strength. | 2 |
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| 6. | (i) What are the different types of external paints used in building construction? | 3 |
| | (ii) What are varnishes? Explain their use in the building industry. | 4 |
| | (iii) Explain different steps undertaken to paint steel & wooden surfaces. | 8 |
| 7. | Differentiate between the followings | |
| | (i) Fine Aggregate & Coarse Aggregate | 3 |
| | (ii) Bulking and Soundness in aggregates | 3 |
| | (iii) Grouting and Guniting. | 3 |
| | (iv) Explain different types of mortar used in building construction and their respective mix ratios | 6 |
| 8. | (i) Draw the plan and sections for 5 different types of arches. | 5 |
| | (ii) Draw a section through an external Load bearing wall showing all details. | 10 |