

**BIRLA INSTITUTE OF TECHNOLOGY, MESRA, RANCHI  
(END SEMESTER EXAMINATION)**

**CLASS: B.TECH  
BRANCH: CIVIL ENGINEERING**

**SEMESTER : 3<sup>rd</sup>  
SESSION : MO/2022**

**SUBJECT: CE204 BUILDING MATERIALS AND CONSTRUCTION**

**TIME: 3.00 HOURS**

**FULL MARKS: 50**

**INSTRUCTIONS:**

1. The question paper contains 6 questions and total 50 marks.
  2. Attempt all questions.
  3. The missing data, if any, may be assumed suitably.
  4. Before attempting the question paper, be sure that you have got the correct question paper.
  5. Tables/Data hand book/Graph paper etc. to be supplied to the candidates in the examination hall.
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**Q.1 Select the correct answer for the following multiple choice questions.**

- (a) Quartzite is a [1]
- (A) Metamorphic rock  
(B) Argillaceous rock  
(C) Calcareous rock  
(D) Silicious rock
- (b) Seasoning is [1]
- (A) A process of removing sap  
(B) Creosoting  
(C) Painting with sodium silicate  
(D) Coating with tar
- (c) The standard size of masonry bricks, is [1]
- (A) 18 cm x 8 cm x 8 cm  
(B) 19 cm x 9 cm x 9 cm  
(C) 20 cm x 10 cm x 10 cm  
(D) 21 cm x 11 cm x 11 cm
- (d) The initial setting of cement is caused due to [1]
- (A) Di-calcium silicate,  
(B) Tri-calcium silicate,  
(C) Tri-calcium aluminate,  
(D) Tri-calcium alumino ferrite [1]
- (e) Age of a tree may be ascertained by [1]
- (A) Radius of its stem  
(B) Circumference of its stem  
(C) Number of branches  
(D) Number of annual rings. [1]
- (f) Rapid hardening cement contains [1]
- (A) Tri-calcium silicate  
(B) Tri-calcium aluminate  
(C) Tetra-calcium alumino-ferrite  
(D) Dicalcium silicate [1]
- (g) After casting, an ordinary cement concrete on drying [1]
- (A) Expands  
(B) Mix  
(C) Shrinks  
(D) None of these

(h) Specified compressive strength of concrete is obtained from cube tests at the end of

- (A) 5 days
- (B) 9 days
- (C) 15 days
- (D) 28 days

(i) The term frog means

- (A) An apparatus to lift the stone
- (B) A depression on a face of brick
- (C) Vertical joint in a brick work
- (D) Soaking brick in water

(j) Slump test for concrete is carried out, to determine

- (A) Strength
- (B) Durability
- (C) Workability
- (D) Water content

- Q.2(a) Discuss about the dressing of stones. [4]
- Q.2(b) Discuss the difference between clamp burning and kiln burning of bricks [4]
- Q.3(a) Write short notes on Consistency test of cement. [4]
- Q.3(b) Describe about the seasoning of timber. [4]
- Q.4(a) Compare brick and stone masonry. [4]
- Q.4(b) Discuss about the types of shallow foundations. [4]
- Q.5(a) What is workability of concrete and also discuss slump cone test for workability of Concrete. [4]
- Q.5(b) Discuss about the methods of damp proofing in buildings. [4]
- Q.6(a) Compare Globe valve with Gate valve. [4]
- Q.6(b) Write short note on materials for service pipes. [4]

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