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(vii) The 9 cm x 9 cm side of a brick as seen in the wall face, is generally known as (a) stretcher (b) face (c) front (d) header. The portion of a brick cut across the width, is called (viii) (b) half brick (a) closer (c) bed (d) bat. (ix) Knots reduce the tensile strength of wood (a) along the grain (b) across the grain (d) none of these. (c) tangential to the grain (x) The type of bond in which every course contains both headers and stretchers, is called (a) English bond (b) Flemish bond (d) Mixed bond. (c) Russian bond

Group - B

- 2. (a) What are the differences between English and Flemish bond? What are the rules for bonding?
 - (b) Draw the plan and elevation of one brick thick English bond.

(4+2) + (3+3) = 12

- 3. (a) What are the different type of pile foundation based on function? Explain briefly.
 - (b) Draw figure of Queen closer (half), Queen closer (quarter), King closer.

6 + (2 + 2 + 2) = 12

Group - C

- 4. (a) Write down the characteristics of good mortar. Classify mortar.
 - (b) What is wax paint? Write down its composition. Describe the functions of various components of oil paint.

(3+3) + (1+1+4) = 12

- 5. (a) State the advantages of seasoning.
 - (b) State the difference between natural seasoning & Kiln seasoning.
 - (c) State the advantages of artificial seasoning.

4 + 4 + 4 = 12

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Group - D

- 6. (a) What are the harmful substances of brick? What are the ingredients of good brick earth?
 - (b) Write the use of Rapid hardening Portland cement, Low heat cement, White and coloured cement.

(3+3) + (2+2+2) = 12

- 7. (a) Explain alkali aggregate reaction. Explain the elongation test of aggregate.
 - (b) Explain soundness test of cement paste.

(3+3)+6=12

Group - E

- 8. (a) Plan a dog legged stair for a building in which the vertical distance between the floors is 3.6m. The stair hall measures 2.5m x 5m. (Assume suitable data that is required).
 - (b) Write a short note on Marble flooring, Terrazzo flooring and Mosaic flooring.

6 + 6 = 12

- 9. (a) Draw and describe queen post truss.
 - (b) Briefly define the types of pitched roof with neat sketches.

5 + 7 = 12

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BUILDING MATERIALS AND CONSTRUCTION (CIVL 2103)

Time Allotted : 3 hrs

Full Marks : 70

Figures out of the right margin indicate full marks.

Candidates are required to answer Group A and <u>any 5 (five)</u> from Group B to E, taking <u>at least one</u> from each group.

Candidates are required to give answer in their own words as far as practicable.

Group – A (Multiple Choice Type Questions)

1.	Choose the correct alternative for the following:				10 × 1 = 10	
	(i)	The members v (a) rafter	vhich support cove (b) purlins	ring materials of a (c) battens	sloping roof are (d) struts.	
	(ii)	A paint is generally made up of (a) a vehicle (c) a blistering			(b) a sub base (d) none of these.	

- (iii) Which of the following mortars is most suitable for construction work in water-logged areas?
 (a) Lime mortar
 (b) Gauged mortar
 (c) Cement mortar
 (d) Mud mortar.
- (iv) Efflorescence of bricks is due to
 (a) improper burning
 (b) high porosity of bricks
 (c) high alkali content in brick earth
 (d) excessive burning of bricks.
- (v) The number of bricks required per cubic meter of brick masonry is (a) 400 (b) 500 (c) 450 (d) 550.
- (vi) The foundation in which a cantilever beam is provided to join two footings, is known as
 (a) strip footing
 (b) strap footing
 (c) combined footing
 (d) raft footing.