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**PRESIDENCY UNIVERSITY
BENGALURU**

**SCHOOL OF ENGINEERING
MID TERM EXAMINATION - APR 2023**

Semester : Semester II -2022

Course Code : CIV1006

Course Name : Sem II - CIV1006 - Building Materials and Concrete Technology

Program : CIV

Date : 18-APR-2023

Time : 2PM - 3:30PM

Max Marks : 50

Weightage : 25%

Instructions:

- (i) Read all questions carefully and answer accordingly.
- (ii) Question paper consists of 3 parts.
- (iii) Scientific and non-programmable calculator are permitted.
- (iv) Do not write any information on the question paper other than Roll Number.

PART A

ANSWER ALL THE QUESTIONS

(5 X 2 = 10M)

1. The nominal size of coarse aggregates which are generally preferred for Reinforced concrete structures is
a) 80 mm (CO1) [Knowledge]
b) 60 mm
c) 20 mm
d) 4.75 mm
2. The property to be considered for stones which are subjected to abrasive forces caused by the wear and friction is termed as
a) Hardness (CO1) [Knowledge]
b) Specific gravity
c) Toughness
d) None of these
3. Which chemical composition is the highest in OPC?
a) Alumina (CO2) [Knowledge]
b) Silica
c) Lime
d) Iron oxide
4. Which compound gives the grey colour to the cement?
a) Lime (CO2) [Knowledge]
b) Iron Oxide
c) Silica
d) Alumina

5. The type of bricks in which surface and edges of the bricks are sharp, square, smooth and straight are
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- a) First class bricks (CO1) [Knowledge]
 - b) Second class bricks
 - c) Third class bricks
 - d) Fourth class bricks

PART B

ANSWER ALL THE QUESTIONS

(4 X 5 = 20M)

6. When Portland cement is mixed with water, its chemical compound constituents undergo a series of chemical reactions that cause it to harden. Write short notes on hydration of cement. (CO2) [Comprehension]
7. There are innumerable applications of bricks in the field of Civil engineering. They are widely used as structural as well as a non-structural (aesthetical) elements in construction. List the various applications of bricks in construction activities. (CO1) [Comprehension]
8. Stone is an essential and more permanent building material in construction than other natural building materials. List the various applications of stone as a building material. (CO1) [Comprehension]
9. Hollow blocks are being described as blocks with a core zero area larger than 25% of a total surface area. Its use of concrete blocks for masonry construction has indeed been quickly established which are higher than conventional construction materials such as bricks and stones. List the various applications of hollow blocks in construction (CO1) [Comprehension]

PART C

ANSWER ALL THE QUESTIONS

(2 X 10 = 20M)

10. The particle size distribution of an aggregate as determined by sieve analysis is termed as gradation of aggregates. This is an important factor for concrete mix design, which affect the concrete strength as well as durability. Proper grading is important for concrete construction. Briefly discuss the importance of grading of aggregates and sieve analysis test of coarse aggregates. (CO1) [Application]
11. Explain in detail the various physical properties of cement. (CO2) [Application]