



আন্তর্জাতিক ইসলামী বিশ্ববিদ্যালয় চট্টগ্রাম
International Islamic University Chittagong
Faculty of Science and Engineering (FSE)
Department of Civil Engineering (CE)

END-OF-SEMESTER EXAMINATION
SEMESTER AUTUMN, 2022 SESSION

Programme	: Bachelor of Science in Civil Engineering	Level of Study	: UG 1
Time	: 10.30am	Date	: November 28, 2022
Duration	: 3 hours		
Course Code	: CE-1206	Section(s)	: 1
Course Title	: Concrete Sessional		

This Question Paper Consists of two (02) Printed Pages (Including Cover Page and Appendix) with eight (08) Questions.

Course Learning Outcome(CLO)	
CLO-1	Evaluate properties of materials used in construction.
CLO-2	Prepare concrete mix design and evaluate their fresh and hardened properties.
CLO-3	Evaluate the engineering properties of bricks.

INSTRUCTION(S) TO CANDIDATES

DO NOT OPEN UNTIL YOU ARE ASKED TO DO SO

- This is a Closed Book, Closed Notes Examination.
- Do not open until You Are Asked to Do So.
- Total mark of this examination is 30.
- Attempt All Questions.
- Only approved calculator with 'FSE-CE sticker is allowed (Use of non-Programmable or non-Graphical Calculator)
- Mobile Phones and Other Electronic Devices are Prohibited in the Exam Hall.
- **Workout Can Be Done Using Pencil Or Pen.**

Note: Any form of cheating or attempt to cheat is a serious offence, which may lead to dismissal

QUESTION 1

What difficulties arise in the use of aggregates which absorb water?

(4 marks)

QUESTION 2

Calculate the Bulk Specific Gravity (OD) and percentage of Absorption using the following data:

(4 marks)

SL	Wt. of OD CA, A (gm)	Wt. of SSD CA, B (gm)	Wt. of CA in Water, C (gm)
1	485	512	325

QUESTION 3

What would be the effect upon the unit weight if the aggregate be placed in the cylinder without rodding?

(4 marks)

QUESTION 4

Calculate the unit weight of the aggregate sample using the following data:

(4 marks)

SL	Wt. of Bucket, T (kg)	Wt. of Bucket + Material, G (kg)	Volume of Bucket, V (m ³)
1	2.8	36.5	0.02

QUESTION 5

How do you measure the absorption capacity of a brick? What will happen if a brick absorb more water?

(4 marks)

QUESTION 6

Explain the importance of curing in strength development. Explain the variation of strength of time

(4 marks)

QUESTION 7

Calculate the compressive strength of the cement mortar (cube specimen) using the given test results.

(3 marks)

Age (days)	Crushing Load (N)	Specimen Area (mm ²)	Compressive Strength (N/mm ²)
1	48x10 ³	2025	

QUESTION 8

Discuss the effect of rate of loading upon the compressive strength.

(3 marks)

End of Questions Paper