



BOWEN UNIVERSITY (Of the Nigerian Baptist Convention) IWO
COLLEGE OF ENVIRONMENTAL SCIENCE (COEVS)

SECOND SEMESTER EXAMINATION, 2023/2024

ARCHITECTURE PROGRAMME

ARC 308: BUILDING COMPONENTS & METHODS IV (2 UNITS)

INSTRUCTION: THIS PAPER CONTAINS SIX QUESTIONS. ANSWER QUESTION ONE & ANY OTHER THREE QUESTIONS.

TIME ALLOWED: 2 HOURS

USE WELL LABELED DIAGRAM(S) WHERE APPLICABLE

WARNING: PLEASE NOTE THAT YOU ARE NOT ALLOWED TO BRING MOBILE PHONE(S) INTO THE EXAMINATION HALL. NON-COMPLIANCE WILL AMOUNT TO EXAMINATION MISCONDUCT AND ATTRACT STIFF PENALTY.

QUESTION 1

- (a) What are the basic characteristics of concrete? (5 Marks)
- (b) State all components of concrete and their functions in the mix. (5 Marks)
- (c) What is precast concrete? (5 Marks)
- (d) Enumerate the basic advantages and disadvantages of precast concrete. (5 Marks)
- (e) List and discuss briefly at least four (4) types of precast concrete and usage. (5 Marks)

QUESTION 2

- (a) List five types of cement and describe the conditions under which you will recommend their usage. (10 Marks)
- (b) Outline the basic storage methods for the following concrete components: (5 Marks)
 - (i) Cement
 - (ii) Aggregate

QUESTION 3

- (a) Explain in detail, the stages of concrete production. (5 Marks)
- (b) What are the basic conditions for transporting concrete mix? (5 Marks)
- (c) What is concrete compaction and what are its basic advantages? (5 Marks)

QUESTION 4

- (a) What is curing (5 Marks)
- (b) Give an in-depth explanation on different methods of curing concrete. (5 Marks)
- (c) What are the benefits of concrete curing? (5 Marks)

QUESTION 5

With good sketches, write short notes on at least five (5) different types of scaffolding. (15 Marks)

QUESTION 6

- (a) What is workability of concrete? (5 Marks)
- (b) What are the factors affecting the workability of concrete? (5 Marks)
- (c) State any five (5) functional requirements of concrete in its fresh state. (5 Marks)