



BOWEN UNIVERSITY (Of the Nigerian Baptist  
Convention) IWO

College of Environmental Science (COEVS)

FIRST SEMESTER EXAMINATION, 2023/2024

DEPARTMENT OF ARCHITECTURE

ARC 303: BUILDING SERVICES (2 UNITS)

**INSTRUCTION:** This paper contains six questions. Answer Questions 1 and any other three (3) questions in all

**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.

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1. (a) With the aid of diagram, list the sources of water and give examples? (10 marks)  
(b) List and explain the various treatment of water. (10 marks)  
(c) List the 3 processes of a water supply system. (5 marks)
2. List and explain the 3 types of water distribution. (15 marks)
3. Write short notes on the following, provide sketches where necessary
  - i. Soakaway
  - ii. Drains
  - iii. Sewers
  - iv. Inspection chambers
  - v. Manholes (15 marks)
4. (a) (i) What are sanitary appliances? (7 marks)  
(ii) List the two types of sanitary appliances with examples. (4 marks)  
(iii) Describe the two types of a wash down water closet. (4 marks)
5. (a) List 5 types of water taps. (5 marks)  
(b) Explain and state 5 advantages and disadvantages of water taps listed in question 5a (10 marks)
6. (a) Explain the process of heat transfer. (6 marks)  
(b) Write short notes on the following
  - i. Conduction
  - ii. Convection
  - iii. Radiation (9 marks)