

FEDERAL UNIVERSITY OF TECHNOLOGY, MINNA
SCHOOL OF ENVIRONMENTAL TECHNOLOGY
DEPARTMENT OF ARCHITECTURE

SECOND SEMESTER EXAMINATION 2016/2017SESSION

COURSE TITLE: BUILDING MAINTENANCE

COURSE CODE: ARC 522

LEVEL: 500

HEAD OF DEPT: DR P. AYUBA

LECTURER: PROF S. N. ZUBAIRU

TIME ALLOWED: 2 HOURS 30 MINUTES

INSTRUCTIONS: Answer **Question 1** and **any other three**. All sketches **MUST** be in **PENCIL**.

1.(a) You have been appointed as the maintenance manager of Federal University of Technology, Main Campus, Gidan Kwano. How would you go about preparing a planned preventive maintenance programme for the institution?

(b) What are the benefits to be derived from a well maintained building?
(15 marks)

2. (a) What causes settlement of buildings? Describe the three types of settlement using sketches.

(b) What type of settlement affected the Leaning Tower of Pisa? Discuss the various interventions made to keep the Tower from falling. Provide a sketch of the Tower.
(15 marks)

3.(a) Discuss the various factors that cause maintenance problems.

(b) Shoring is used to secure a building. Using sketches, illustrate ONE method of shoring.
(15 marks)

4.(a) What is underpinning? Why may it be necessary to underpin a building?

Using sketches describe ONE method of underpinning a building.

(b) Briefly discuss the development of Kansai International Airport. What maintenance problems were faced by engineers at the Airport?
(15 marks)

5.(a) Lives of buildings are difficult to assess. Discuss.

(b) Draw a table indicating the expected life and maintenance intervals of some common roofing materials.

(c) Why do different organisations have different quality standards of maintenance?
(15 marks)