

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

80

SECOND SEMESTER EXAMINATION 2018/2019 SESSION

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 **any FOUR questions**. All sketches **MUST** be in **PENCIL**.

1. (a) The Leaning Tower of Pisa underwent many interventions to stabilise the tower. Discuss.
(b) Provide a full page illustration of the tower.
(15 marks)

2. (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)

3. (a) What are the various causes of settlement of buildings?
(b) What caused excessive settlement at Kansai International airport and how did engineers try to solve the problem?
(15 marks)

4. (a) What is underpinning? Why may it be necessary to underpin a building?
(b) Using sketches describe a simple method of underpinning a building.
(c) What are the advantages and disadvantages of outsourcing maintenance works?
(15 marks)

5. (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)

6. Write short notes on the following:
(a) Frost heave
(b) Basements
(c) Made up ground
(d) Listing of buildings
(15 marks)