FEDERAL UNIVERSITY OF TECHNOLOGY, MINNA
SCHOOL OF ENVIRONMENTAL TECHNOLOGY
DEPARTMENT OF QUANTITY SURVEYING

150 ✓

SECOND SEMESTER EXAMINATION 2017/2018 SESSION
COURSE CODE: *QTS 322* **COURSE TITLE**: *Construction Technology*
TIME ALLOWED: 2 *Hours* **CREDIT LOAD**: *3 Units*

INSTRUCTION: Use the Narration Below to answer Questions 1, 2 and any other (i.e. questions 1 and 2 are related to the narrative and are compulsory). **Make reasonable assumptions where necessary.**

Your client has approached you to help him supervise and erect an L-shaped two-storey shopping plaza including a basement, at Kpakungu. In order to carry out the exercise properly you engaged a structural engineer to carry out soil and other tests. The preliminary report from the structural engineer is as on the table below:

SERIAL NUMBER	SECTION OF SOIL PROFILE	STATUS
1	Topsoil	Humus. Supports vegetation
2	Subsoil (first layer up to 900mm deep)	Does not support vegetation. Clay. Water logged.
3	Subsoil (second layer up to 4000mm deep)	Same as 2 above

1. a) suggest the type of foundation suitable for the building. Give reason(s) for your choice (10 marks)
   b) Should the topsoil be removed? If yes, why so? If not, why not? (10 marks)
   c) By means of sketches only, show the plan and side view of the suggested foundation in question (a) above (10 marks).

2. a) suggest, with explanations, two methods by which capillary water can be excluded from the foundation suggested in 1 (a) above). (10 marks)
   b) Should the building include isolated pad foundations? If yes, why so? If not, why not? (5 marks)

3. Write explanatory notes on the following (include labelled sketches):
   a) Retaining walls for use in the basement (10 marks)
   b) Tanking and water cavity in the retaining walls (5 marks)

4. Write explanatory notes on the following (include labelled sketches)
   a) Precast concrete hollow floors (5 marks)
   b) Composite Floors (5 marks)
   c) Raised floors (5 marks)