JULIUS NYERERE SCHOOL OF SOCIAL SCIENCES

DEPARTMENT OF REGIONAL AND URBAN DEVELOPMENT

BACHELOR OF SCIENCE HONOURS DEGREE IN REGIONAL AND URBAN PLANNING

LEVEL 4 SEMESTER 2

EXAMINATION QUESTION PAPER

MODULE CODE	RUPH429
MODULE NARRATION	CONSTRUCTION ECONOMICS AND MANAGEMENT
DATE	2025
DURATION	3 HOURS

INSTRUCTIONS TO CANDIDATES:

1. Answer Question 1 in Section A and any other two questions in Section B
2. All workings must be shown and written legibly.
3. Take the scale to be 1:100 on all drawings and take all measurements as given
4. Materials allowed in the exam: Scientific Calculator

SECTION A

1. (a) Describe the procedures followed during the take-off process in the preparation of the Bill of Quantities. **[5]**

(b) Using the attached building plan (Attachment 1), take off all quantities of materials up to the slab level (substructure). Make and state relevant assumptions. **[35]**

SECTION B

2. Mr. Dlodlo intends to pave his truck park stand measuring 50m x 80m. According to the design, excavation is to be done to a depth of 270mm, followed by 180mm gravel filling and compaction. The pavement brick measures (Height =90mm, Length =210mm, Width = 150 mm). The pavement bricks sit on a polythene paper after the compacted gravel. A roll of polythene paper measures 20m x 2m.

a). Determine the volume of excavation **[7]**

b). How many bricks are used per square metre? **[7]**

c) Calculate the number of bricks required to pave the garage. **[5]**

d). How many rolls of polythene paper are required? **[4]**

e) Calculate the cost of bricks used if each brick costs $10.00 [7]

3. With the aid of diagrams, assess the effectiveness of the Critical Path Analysis in the planning and management of a university construction project. [30]

4. (a) Explain the project life cycle. **[10]**

(b) Examine the importance of feasibility studies in construction project management. **[10]**

(c) Discuss five methods to ensure total quality in a typical construction project **[10]**

5. Evaluate the improvement brought about by the creation of the Procurement Regulatory Authority of Zimbabwe (PRAZ) in the procurement processes in Zimbabwe [30]

END OF PAPER

BUILDING CONSTANTS TABLES

Mortar Components per M²

Ratios	Cement (tons/m³)	Pitsand /m³
1:1	0.97	0.67
1:2	0.66	0.91
1:3	0.50	1.04
1.5	0.40	1.12

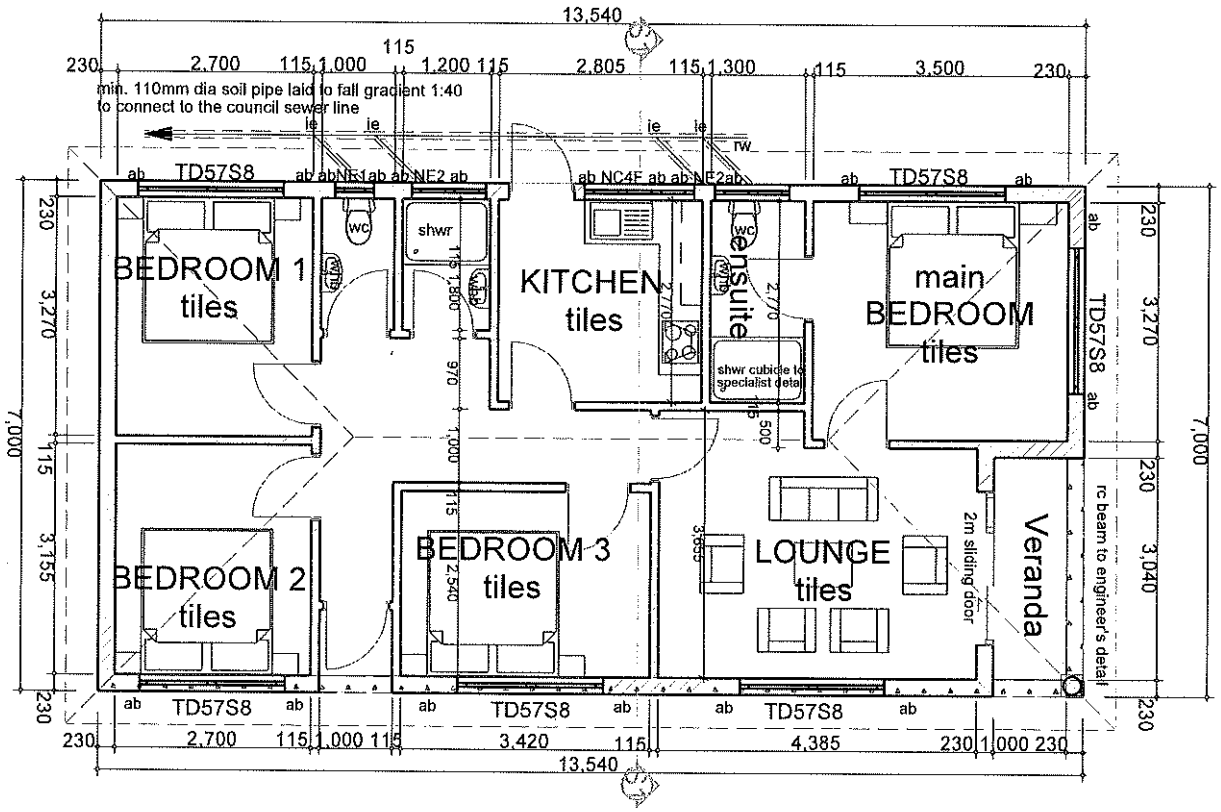
Bricks/M²

Wall Size	Per Square Meter Wall	
	Bricks	Mortar/m³
115mm	55	0.02
230mm	110	0.05
345mm	165	0.08

Concrete Mixes

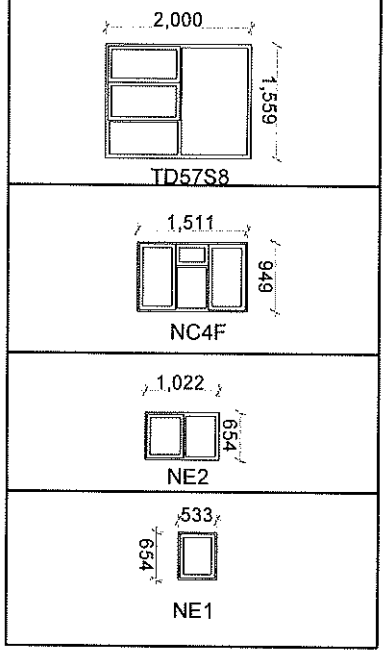
Concrete Mix	Cement/m³	Sand/m³	Stones/m³
1:1:2	9 (0.45)t	0.36	0.73
1:1.5:3	8 (0.40)t	0.40	0.80
1:2:3	7 (0.35)t	0.50	0.75
1:2:4	6.5 (0.28)t	0.45	0.90
1:4:8	4 (0.20)t	0.46	0.3

RUPH429 PAPER 1 ATTACHMENT, Question 1(b)

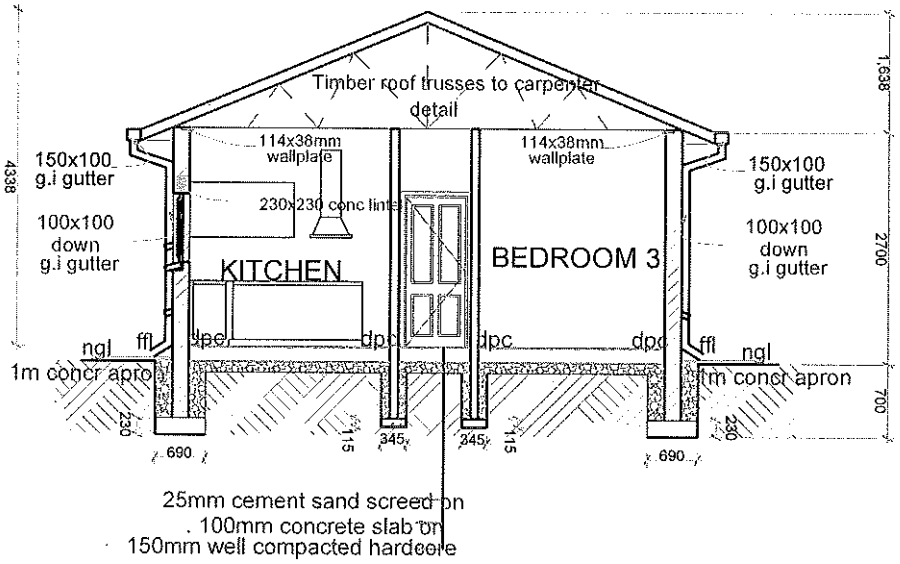


FLOOR PLAN SCALE 1 : 100

WINDOW SCHEDULE



ROOF NOTES
PITCH 22.5°
- IBR SHEETS ON 38x38mm TIMBER BATTERNS @ 300mm c/c
-TIMBER TRUSSES @ CENTRES SPECIFIED BY MANUFACTURE ON 38x115mm WALL PLATE



25mm cement sand screed on
100mm concrete slab on
150mm well compacted hardcore

SECTION S1-S1 SCALE 1 : 100