



PROGRAM : Bachelor of science in Construction (Bcon) Extended
ENGINEERING: BUILDING

SUBJECT : **DESCRIPTIVE QUANTIFICATION**

CODE : **DQUAED1**

DATE : SUPPLEMENTARY EXAMINATION
8 JANUARY 2020

DURATION : 180MIN

WEIGHT : 40: 60

TOTAL MARKS : 156

ASSESSOR : MR. BERENGER Y. RENAULT

MODERATOR : MURENDENI LIPHADZI

NUMBER OF PAGES : 22 PAGES INCLUDING THE COVER PAGE AND 1
ANNEXURE (15 Dimension papers for take-off)
PLUS 1 EXAM ANSWER SHEET

INSTRUCTIONS : ANSWER ALL QUESTIONS.

REQUIREMENTS : WRITING MATERIALS.

INSTRUCTIONS TO CANDIDATES

- SIGN AND DETACH ALL DRAWINGS, SCHEDULES AND HAND IN WITH FOLDERS
- The standard System and Model Bills are not allowed in the examination venue.
- ALL work is to be measured STRICTLY in accordance with the latest edition of the "Standard System of Measuring Building Work".
- Scaling will not be allowed unless dimensions are not given and could not be calculated.
- Where dimensions are not given they should be calculated or measured from the drawings.
- Candidates are to assume their own specifications where workmanship and/or materials that are not mentioned.
- Work to be measured strictly in construction sequence.
- Candidates are to round off all recorded dimensions to 2 decimal places.
- Squaring of dimensions is not required
- Use the answer/exam sheet provided to answer **QUESTION 1 and 2 ONLY**.
- Use the dimension papers/sheets provided to answer **QUESTION 3**.

Question 1 – Multiple choice questions

State whether the following statements are **TRUE (T)** or **FALSE (F)**:

- 1.1 In order for a quantity surveyor to use the title "Professional Quantity Surveyor (PrQS)", he/she must be a holder of relevant qualification and have considerable years of experience..... (1)
- 1.2 It is the contractor's responsibility to provides the project requirements and funding for design and construction.....(1)
- 1.3 Construction managers coordinate and supervise the construction process from the initial stage of the development through to the design stage.....(1)
- 1.4 Quantity surveyors' role is to make sure that the project gets completed on time and to the quality requirements.....(1)
- 1.5 Civil engineers are involved in a project at the design stage only.....(1)
- 1.6 Project managers coordinate all details of a project to ensure that all needs and resources are balanced to meet the client's schedule, delivery and budget requirements...(1)
- 1.7 Construction documents for the owner are produced by the design team which comprises of a construction manager and a quantity surveyor..... (1)
- 1.8 The party for whom construction work is performed is known as the client's representative.....(1)
- 1.9 Clients can be once-off or repeated procurers of work..... (1)
- 1.10 The title quantity surveyor was reserved under the Quantity Surveyors' Act of 1970 for exclusive use by those who had obtained the necessary qualifications and experience prescribed under the Act.....(1)
- 1.11 Quantity surveyors are required to comply with a strict code of professional conduct. This code includes responsibility to their employers or clients and to their profession while having full regard for the public interest.....(1)
- 1.12 In order to advice the client/owner on fair contract prices for tenders, the quantity surveyor must study the tenders (quotations) submitted by the architects.....(1)
- 1.13 The natural environment comprises of complete ecological units that function as natural systems with massive human intervention.....(1)
- 1.14 The term built environment may be used to describe the interdisciplinary field of study which addresses the design, management and use of these man-made surroundings and their relationship to the human activities which take place within them.....(1)
- 1.15 Apart from the day-to-day services provided to clients, quantity surveyors are also competent to act as principle agent of clients.....(1)
- 1.16 The early development of quantity surveying in South Africa was greatly influenced by the country's many political and economic changes.....(1)

1.17 Quantity surveying dates back to the beginning of the nineteenth century in England where quantity surveyors were then known as surveyors, measurers and by various other names.....(1)

1.18 When working with contractors, quantity surveyors are often referred to as contract surveyors.....(1)

1.19 Quantity surveyors may work in many other fields such as in financial institutions (banks and building societies) where one of the duties is initiating the development of new projects and liaising with professional consultants during the construction process.....(1)

1.20 Quantity surveyors are also known as land surveyors.....(1)

[20]

Question 2 - Mensuration

2.1 Anu wants to fence the garden in front of her house, on three sides with lengths 20m, 12m and 12m (Figure below 1/ Figure 12). Find the cost of fencing at the rate of R150 per metre. What will be the cost of grass, if per square meter grass costs R25? (4)

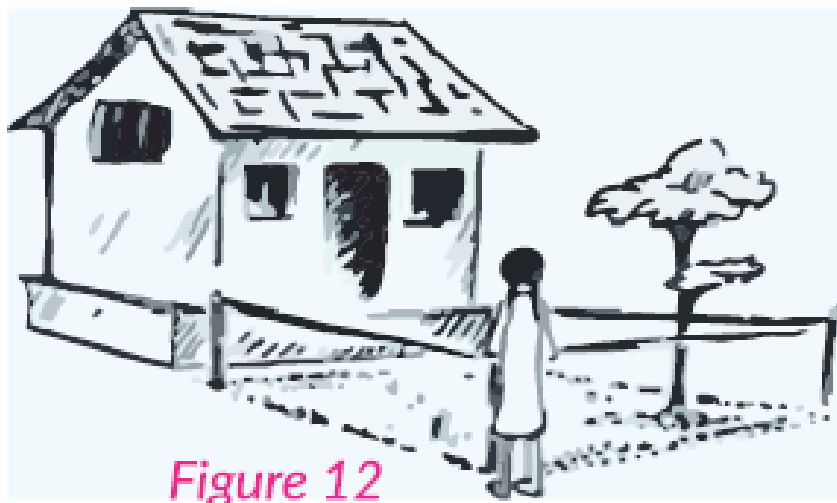
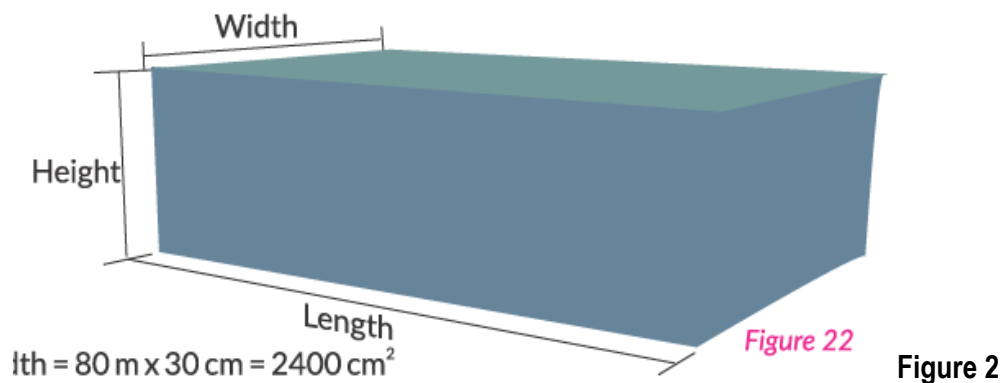


Figure 1

2.2 The internal measures of a room are 12m x 8m x 4m. Find the total cost of whitewashing all four walls of the room (including the ceiling), if the cost of whitewashing is R5 per m². Assume that there is a door of 2m x 1.5m size inside the room. (7)

2.3 An aquarium is in the form of a cuboid whose external measures are 80cm x 30cm x 40cm (Figure 2). The base, side faces, and back face are to be covered with a coloured paper. Find the area of the paper required. (4)



[15]

QUESTION 3 – Descriptive Quantification

Refer to drawing QST3/19 and demonstrate your ability to take off quantities for the following sections of work, all in accordance with the specification notes. DO NOT deduct the openings to doors and windows or any other openings

- | | |
|--|-------|
| 1. Foundation collections | (6) |
| 2. Foundations/Substructure up to top of surface bed level | (96) |
| 3. Solid floor construction | (19) |
| | [121] |

SPECIFICATION NOTES

EARTHWORKS

- Clear site to 1500mm beyond the building
- Stripping of topsoil is NOT required.
- Rock excavation: Soft rock depth 250 mm; Hard rock depth 150 mm.
- Backfill to foundations with excavated material in 150mm layers compacted to 80% Mod. AASHTO density
- Surplus excavated material to be carted off site
- Foundation details: Internal footings are 500 x 300; and External footings are 600 x 450.

CONCRETE, FORMWORK AND REINFORCEMENT

- 15MPa mass concrete 1:3:6 (19mm stone) in footings
- 50mm 15 MPa mass concrete blinding 1:3:6 (19mm stone) under footings

MASONRY

- All brickwork in clay stock bricks in 1:4 cement mortar.
- 220mm brick walls built in stretcher bond. 110mm brick walls built in English bond
- Brick size: 220mm x 110mm x 75 mm
- Face bricks to external brickwork is Inca Brown Smooth face bricks with square recessed joints and pointed with 1:3 cement mortar. Allow two brick courses for face bricks in foundations

FLOORING

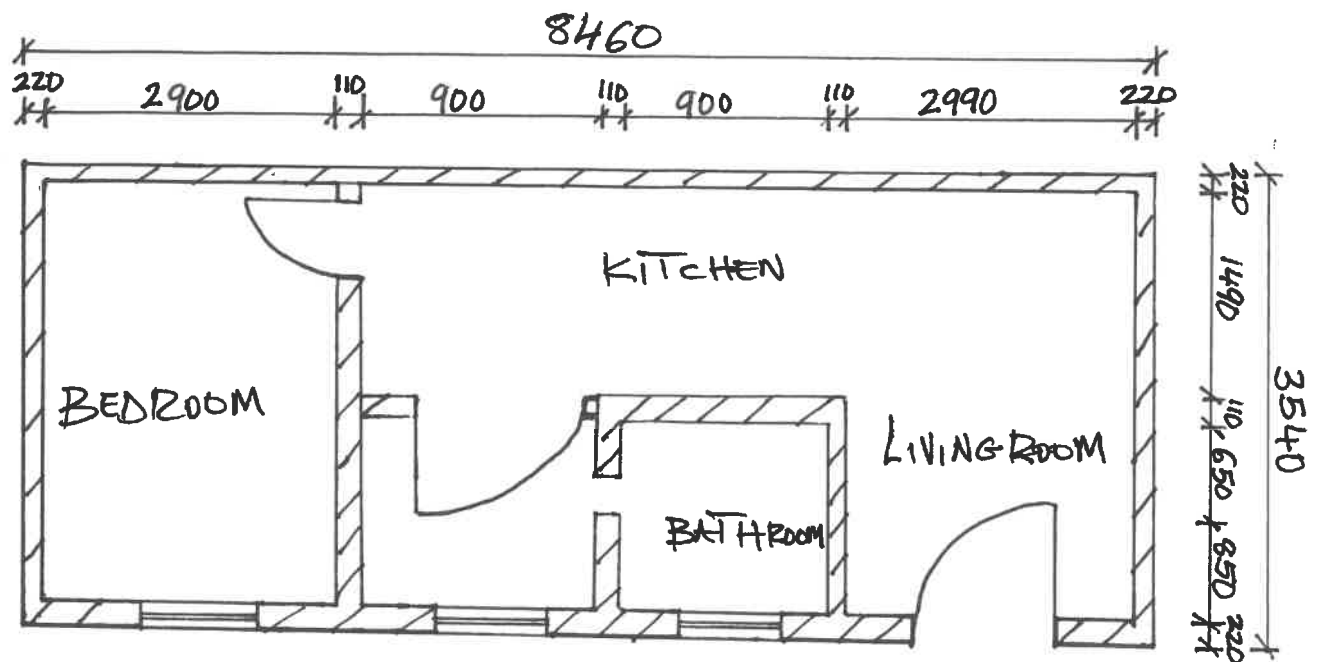
- 150mm surface bed.
- 25mm sand blinding.
- 200mm imported fill under floors well-watered and compacted to 90% Mod ASSHTO.
- 100mm hard core.

WATERPROOFING

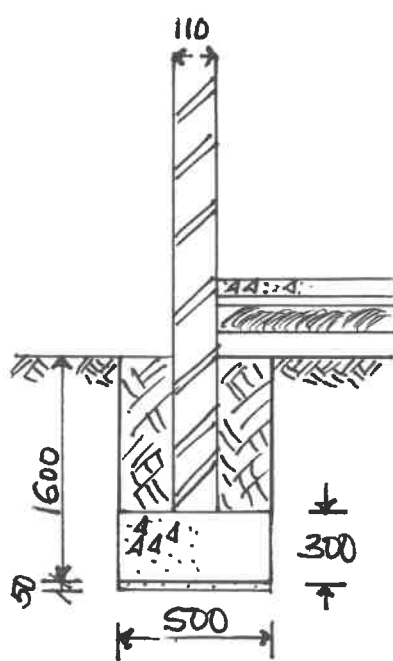
- 375 Micron Gundle Gunplas DPC on walls. 250 Micron Gundle Gunplas (SABS) DPM under floors with sealed laps.

TOTAL MARKS [156]

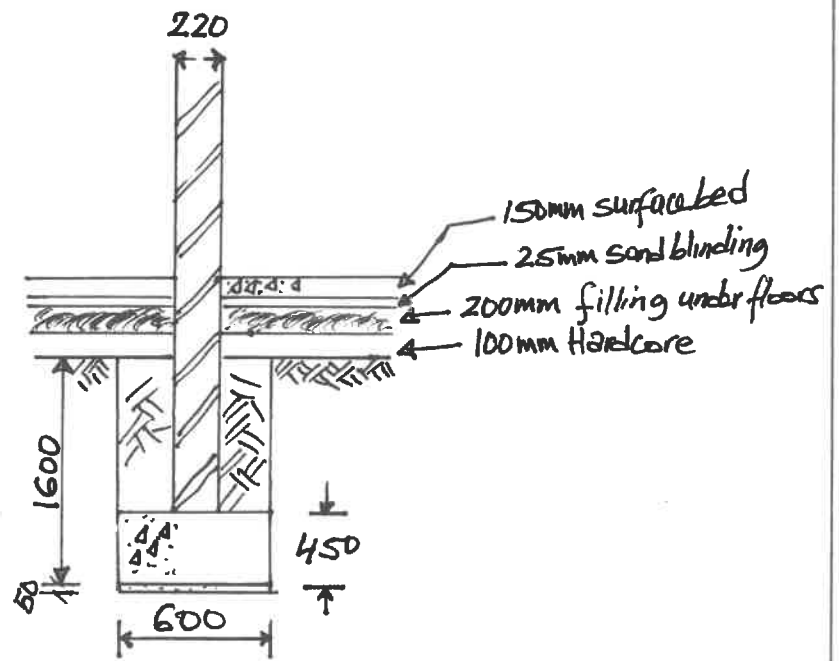
Good luck!



FLOOR PLAN



Internal footings



External footings

Dwelling House For Ms Simphiwe

Drawing No. QST3/19



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Dimension paper

Student No.....

Two sets of vertical lines for writing, each consisting of a double line on the left and a single line on the right.



UNIVERSITY
OF
JOHANNESBURG

Dimension paper

Student No.....

Two sets of vertical lines for dimensioning. Each set consists of a double line on the left and a single line on the right, forming a narrow column.



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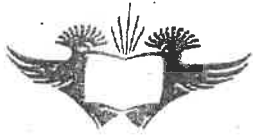


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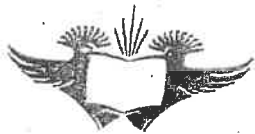


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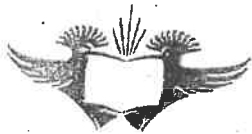


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