

**COVENANT UNIVERSITY
NIGERIA**

*TUTORIAL KIT
OMEGA SEMESTER*

**PROGRAMME: BUILDING
TECHNOLOGY**

COURSE: BLD 327

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BLD 327: MEASUREMENT OF BUILDING WORKS I

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Measurement of Building Works

Take off quantities for the following items of substructure in the drawings attached.

1. Topsoil excavation
2. Trench excavation
3. Topsoil disposal
4. Earth work support
5. Hard core filling
6. Compacting
7. Over site concrete
8. Foundation wall

The Standard Method of Measurement

9. Identify the advantages of SMM 7
10. Describe the Standard Method of Measurement (SMM)

Quantity Surveying

11. **What** are the factors that will influence the developing roles of the Quantity Surveyor
12. Describe the discipline Quantity Surveying
13. Describe any five (5) traditional **roles** of the Quantity Surveyor
14. Is the Quantity Surveyor an important professional in the construction industry? Yes or No. Discuss.

Bill of Quantities

The Bill of Quantity is a document which contains a complete analysis of materials, labor and plant required for the execution of construction works.

15. Why is this **document relevant** in a building contract?
16. This document can be arranged in a number of formats. Enumerate any three (3) of the formats and briefly explain them
17. Enumerate and briefly **explain the** contents of the Bill of Quantities

Principles of Measurement

18. Describe the following terms with illustrations:
 - i. Anding
 - ii. Dotting on
 - iii. Timesing
 - iv. Nilling

19. **Enumerate** the forms of dimension in measurement
 20. Describe the following terms : ‘taking off’, ‘squaring’ and ‘billing’.

ANSWERS

Question One

	L	B
	10300	8175
Add 2/225	450	450
	10750	8625

10.75 Excavating topsoil for preservation average depth 150mm

8.63 (D20.2.1.1.0)

Question Three

10.75 Disposal of excavated material on site 10m away from excavation (D20.8.3.2.1)

8.63

0.15

Question Five

2.40 Filling to make up levels average thickness not exceeding 0.25m obtained

1.88 off site, hardcore (D20.10.1.3.0)

0.15

1.38

1.80

0.15

1.80

2.40

0.15

4.00

3.00

0.15

0.60

2.35

0.15

3.90

5.63

0.15

3.90

5.63

0.15

2.40

3.53

0.15

1.20

2.40

0.15

3.00

1.20

0.15

2.40

3.00

0.15

Question Seven

10.30 Plain in situ concrete bed poured on unblended hard core (E10.4.0.0.5)

8.18

0.15

Question Nine

1. The rules are technically adequate
2. No ambiguity

3. Rules can be easily applied
4. Only items of cost significance are measured
5. There is consideration for a wide variety of application.

Question Eleven

- i. Client focus
- ii. Development and application of information and communication technologies
- iii. Research and its dissemination
- iv. Graduate capability
- v. Practice size

Question Thirteen

1. Final Account - Refers to the final contract sum. In most cases there is a difference between the amount agreed by the client and the contractor. The calculation and agreement of this final construction cost, is the final account.
2. Interim valuations and payments – Valuation is the process of ascertaining the amount of work done by the contractor at regular intervals, usually monthly. The QS prepares interim valuation certificates with which payments for work done are made to the contractor
3. Measurement and Quantification - A survey was carried out some time ago and the report of the survey painted a picture of a world where the Quantity Surveyor was primarily a producer of Bills of Quantities, the conclusion of the report was that the distinct competence of the QS is measurement and quantification, a view still shared by many today.

4. Approximate Estimates - Approximate estimates provide clients with the cost of a proposed project before detailed drawings are available.

5. Interim valuations and payments – Valuation is the process of ascertaining the amount of work done by the contractor at regular intervals, usually monthly. The QS prepares interim valuation certificates with which payments for work done are made to the contractor.

Question Fifteen

1. It enables all contractors tendering for a job to price exactly the same information with a minimum of effort.
2. It provides the basis for valuation of variations which often occur during the progress of the work.
3. It gives the successful contractor a tool for planning the job i.e. both in execution of the job and in ordering materials for the job.
4. It provides a basis for cost planning and cost analysis after it has been priced.

Question Seventeen

1. Preliminaries
2. Preambles
3. Contingency

4. Prime cost sums
5. Provisional sums
6. Measured work
7. Appendices

Question Nineteen

1. Cubic measurements
2. Square or superficial measurements
3. Linear measurements
4. Enumerated items
5. Items

$$\tau_{\min} = -1/2 [(155 + 105)] = -130 \text{ N/mm}^2$$