SECTION A

1. Construction cost represents the amount of money a client will have to pay a building contractor for executing the construction works. Initially the Contractor's tender sum will give an indication of this amount.

2. The role of a Quantity Surveyor during preparation of tender:
   - Carrying out feasibility studies and economic evaluation
   - Preparation of bills of quantities to be used during tendering
   - Estimate the value of future works and monitoring expenditure
   - Advise client and Contractor about project
   - Negotiating rates with Contractor on negotiated contract, and dealing with Cost Reimbursement contract
   - Cost planning
   - Examining tenders and priced bills of quantities and reporting his findings
   - Preparing the final account on completion of the contract works
   - Advising on the financial and contractual aspects of Contractors claims.

3. Three types of Certificates that an architect can issue as approval for payment to the general contract are:
   i) Interim Certificate: this is issued once in a month during the Contract period.
   ii) Penultimate Certificate: is issued on practical completion of construction works.
   iii) Final Certificate: this is issued on practical after satisfactory completion of defects, i.e. after defect
4. a) Taking off
   This is a technical term referring to the measurement of all sections in accordance with an agreed standard method of measurement of building works involving entering dimensions read or scaled from drawings in a recognized from especially ruled paper known as dimension paper.

b) Abstracting
   This is transferring the squared dimensions into the abstract paper in a recognized order under appropriate work sections. The figure are subsequently totaled and adjustments made for deduction.

c) Squaring
   This is the process of squaring the recorded dimensions and entering the resultant lengths, areas and volumes in the fourth or squaring column of the dimension paper.

5. a) Variation orders
   Variation orders are contractual documents used for resolving/adjusting a technical problem relating to cost. e.g. where there is unprecedented increase in prices of commodities.

b) Monthly payment certificates
   Monthly payment certificates are confirmation of payment for work executed and quantified.
6. Cost Control refers to all methods of controlling the cost of building projects within the limits of a predetermined sum throughout the design and construction stages.

Cost planning, cost planning, on the other hand, refers to controlling the cost within predetermined sum during the design stage, and normally envisages the preparation of cost plan and the carrying out of cost checks. It is information obtained from cost analysis to maintain a proper control of cost of future projects.

7. Bills of Quantities

This is a form of contract documentation which contains a schedule of fully described and quantified items of labour, plant, materials, and other works set out in a systematic recognized manner. This ensures a systematic arrangement of the document normally prepared in accordance with an agreed standard method of measurement.

<table>
<thead>
<tr>
<th>No</th>
<th>Description</th>
<th>Qty</th>
<th>Unit</th>
<th>Rate</th>
<th>Amount</th>
</tr>
</thead>
</table>

5. Elemental bills of quantities are divided into sections, each of which is an important element of a building, e.g., external walls, roof, doors etc. However, within an element, each work item can be billed in a trade order. This billing format ensures easy identification of the location and cost of every element.

* Sectionalized trade bills of quantities, on the other hand, contain every trade arranged as an element in the document. This arrangement is easy.
Vantageous in that it makes tendering and production management easy. 6 marks.

8. Feasibility study is carried out after a project brief has been formulated to examine the client proposal to establish the degree to which it is practicable. During the study, appraisal of issues such as legal, technical, economical etc. are done. 2 marks.

9. The two main functions of bills of quantities:
   i) It provides sufficient information on the quantities of work to be performed to enable the tenderer bid using the same information. 2 marks.
   ii) To provide priced bill of quantities for use in periodic valuation of works executed.
   iii) After being priced it provides a good basis for a cost analysis, which subsequently will be of use in future contracts in cost planning work.
   iv) It gives an itemised list of the components of the building with a full description and the quantity of each part. (Any two, 2 marks each)

10. a) Specifications is a detailed explanation of expected workmanship and quality of materials to be used by the contractor in executing a given piece of work. 2 marks.

b) the purpose of bills of specifications:
   i) Used by builder/client estimator and contractor estimators as the only information for preparing competitive tenders. 2 marks.
I. Used by quantity surveyor in the preparation of a bill of quantities as a base for competitive tender.

ii. To be used by clerk of works and builders' foreman during construction.

iv. Is used by procurer (buyer) to select the wanted materials or equipment (Any three marks each) (6 marks)

V. The quantity surveyor is a professional in a construction project who advises the architect and the client on matters relating to economic and financial aspects of the project. The functions performed by the quantity surveyor include:

(i) Preparation of preliminary cost advice and approximate estimating.

(ii) Preparation of cost plan and carrying out effective study.

(iii) Preparation of contract documentation for contractor selection process.

(iv) Evaluation of contractors' tenders with recommendation for acceptance or rejection.

VII. Preparation of cash flow forecasts and institution of post-contract cost monitoring.

VI. Valuation of variation that may arise as work proceeds.

VIII. Preparation of periodic cost reports for architect and client.

IX. Preparation and agreement of final account with the contractor.

X. Evaluation and settlement of contractor's claims.

(X marks each)
12. The mean girth of external wall:
Centerline calculation

External girth = (7.041x2) + (5.826x2)
= 14.082 + 11.652
= 25.734m

\[ \text{Deduct thickness} \]
\[ \frac{4 \times 2 \times 4.230}{2} = 0.920m \]

\[ \text{No. of corners} \]
\[ \text{No. of adjustment of the wall} \]

\[ \text{The mean girth of external wall} \] (4 marks)

\[ = [(5.826-2.30) + (7.041-2.30)] \times 2 \]
\[ = (5.526 + 4.811) \times 2 = 24.814m \]
\[ = 24.814m \]

13. Approximate quantities method of cost planning

This is said to be the most reliable method of approximate estimating involving the preparing of a short-cut version of the normal B.O.Q. preparation and pricing. The method involved measuring very broad all-in quantities and applying all-in rates to them. The method is normally used during scheme design stage when firm proposals are available.

(5 marks)
Advantages

i) Provides the most reliable preliminary estimate.

ii) Allows the estimate to be divided into elements or individual items if required.

iii) Adjustment to reflect different size, plan, shape, story, height, and specification can be easily made.

Disadvantages

i) It can take considerable time to prepare.

ii) Adoption depends on availability of reasonably detailed drawings and specifications.

Remarks

14. The factors that can cause the initial tender sum to change in the procurement process:

i) Increased cost as a result of increases in the price of material (components) plant and labour resources.

ii) Financial adjustment as a result of variation.

iii) Claims of direct loss and or expense submitted by the contractor due to disruptive events.

iv) Indirect cost of development which affect production program for which neither the contractor nor the client is contractually responsible.

v) Indirect cost of legal expenses incurred as a result of resolving contractual dispute in the Court of law or in arbitration.

(2 marks each column)

Remarks
SECTION C

a) Provisional Sum

This is a pre-assessed sum included in the bills of quantities by the client to cover items of work or for costs which cannot be detailed or defined owing to lack of information or incomplete design.

b) Preliminary

The first section of bills of quantities is usually termed the preliminary bill. It describes the nature and extent of work, the type of contract and all factors affecting the physical execution of the works and hence contains several non-measurable financial matters which relate to the construction project as a whole. These financial matters are not confined to any particular section of the project.

C1) Prime Cost Items

This section covers works specifically intended to be executed by specialist firms. The section represents works written in the bills of quantities to be carried out by nominated subcontractors or goods and materials required to be obtained from a nominated supplier.

d) Preamble

This refers to a section in the bill of quantities which describes the quality of materials, processes and workmanship required to complete a construction project. This section normally provides the contractor with the following:

- Type and quality of material, equipment and fixtures including the relevant standards
- Quality of workmanship and permissible tolerance
16. a) Construction cost depends on:

- The size of the project
- Type of development
- Form of structure
- Location of the project
- Complexity of the design and management structure
- Level of specification
- Rendering climate
- Predicated inflation
- Risks involved
- Procurement method adopted
- Value added tax (VAT)
- Insurance
- Cost of labour
- Cost of material
- Cost of construction documents
- Execution Cost
- Cost of equipment
- Overhead Cost
(Any 7 marks each)

b) Source of cost information includes:

- Cost analysis as periodically published by building societies or construction council.
- Cost information from published price books published annually containing a range of price for standard bills of quantities items.
- Priced bills of quantities from previous projects.
- A useful source of information as the cost informa...
tion as the Cost Information tends to be current.
Cost analysis and Cost models produced in
house by the organisation.
This is perhaps the most reliable source of cost
information partly due to the fact that it
is easier to ensure good quality Control and
the format is easily understood and interpr.

- Labour allocation sheet
- Plant hire invoices
- Materials invoice
- Material transfer sheet
- Plant transfer sheet
- Sub-contractor invoices
- Day work sheet