

9210-107

Level 6 Graduate Diploma in Civil Engineering

Quantity surveying

GLa d'Y'DUdYf

You should have the following for this examination

- one answer booklet
- unmarked copy of standard method of measurement 7 (SMM7)
- non-programmable calculator

A worksheet booklet is attached

General instructions

- This examination paper is of **three hours** duration.
- This examination paper contains **seven** questions over two sections.
- The candidates must answer **three** questions from Section A including question one and any two questions from Section B.
- Use standard dimensions papers to answer Question 1 a) ii).
- All questions carry equal marks. The maximum marks for each section within a question are given against that section.
- An electronic, non-programmable calculator may be used but candidates **must** show clearly the steps prior to obtaining final numerical values.
- Drawings should be clear, in good proportion and in pencil. Do **not** use red ink.

Section A

- 1 a) House plan for the proposed single storey house of Mr. John is shown in Figure 1. The storey height is 3.3 m. [Note : All dimensions are given in millimeters]

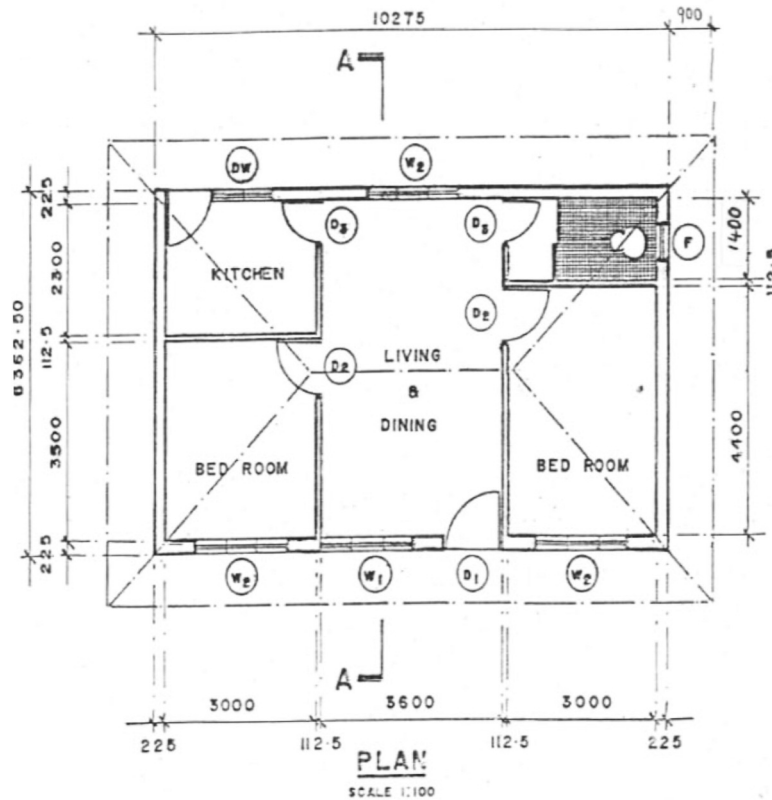


Figure 1: House Plan

- i) Calculate the centerline dimensions of external walls and internal walls. (4 marks)
- ii) Take off quantities for the following items using the given specification notes. All measurements to be taken in accordance with the SMM7. (4 marks)
- External and internal Walls.
 - External wall finishes (Plastering and Painting).
- Where any information is missing, specification is inadequate or exact nature of construction is not clear, you may make appropriate assumptions in relation to the measurement. Any assumptions made shall be entered on to a Query Sheet for the attention of the Architect/Engineer.

Specification Notes:

12 mm cement sand (1:5) semi rough plaster
 One mist and two coats of weather shield paint

(13 marks)

- b) Write the relevant work sections (references) and unit for the following items according to SMM7. (3 marks)
- Excavating top soil on site.
 - Sanitary appliances.
 - Rainwater pipe work.

- 2 a) State three types of bonds or guarantees usually used in the construction industry. (3 marks)
- b) Identify and state three factors important information included in an 'Invitation for Bid'. (3 marks)
- c) Draw the formats for followings and label relevant columns.
- i) Bill of quantities. (3 marks)
- ii) Bar bending schedule. (3 marks)
- d) i) Explain the term 'Selective Tendering'. (3 marks)
- ii) State two advantages of the selective tendering method. (2 marks)
- e) Write important areas need to be considered/referred in preparation of unit rates in a bidding document. (3 marks)
- 3 a) What are the factors affect on the rate of masonry work? (3 marks)
- b) Selection of a suitable contractor is a critical decision for project success. Explain types of tendering methods available. (3 marks)
- c) Calculate the unit rate for supplying and fixing 1 tonne of reinforcement steel. Please make appropriate assumptions for missing information and state clearly. (14 marks)
- Norms: Binding wire – 10 Kg per 1 tonne of reinforcement steel.
 Cost of spacers and chairs 5% of steel cost.
 Bar bender/fixing reinforcement 48 hrs. per tonne.
 Unskilled Labour 24 hrs. per tonne.
- Prices: Reinforcement steel – £ 888 per tonne.
 Binding Wire – £ 834 per tonne.
 Bar bender – £ 11.3 per day.
 Fixer – £ 11.3 per day.
 Unskilled Labourer – £ 8.3 per day.
 Hire rate for Bar cutter and bender – £ 34 per day.
- 4 a) Define a 'contract' according to the law of contract. (3 marks)
- b) Explain elements of a valid contract. (5 marks)
- c) Write two ways for discharge (terminate) of a valid contract. (4 marks)
- d) Write short notes on the following.
- i) Consideration in Law of Contract. (3 marks)
- ii) A claim. (3 marks)
- e) Examine the importance of law of torts with reference to the construction industry. (2 marks)

Section B

- 5 a) i) Explain the purpose of having a separate preliminary bill in the Bill of Quantities. (3 marks)
- ii) Describe the factors consider when pricing the preliminary item of 'bonds and guarantees'. (3 marks)
- iii) You have received the tender documents for a proposed 20-storey apartment building in suburbs city of UK. List **five** head office overheads could be considered for the above project. (5 marks)
- b) State **two** differences between the tender document and the contract document. (2 marks)
- c) Prepare a content page for a tender evaluation report. (5 marks)
- d) Write **two** preamble notes for 'concreting trade' (2 marks)
- 6 a) Define Variations related to a contract. Elaborate your answer with examples. (5 marks)
- b) i) Identify **two** main types of subcontracts. (2 marks)
- ii) Distinguish contractual relationship of each subcontract with the main contractor and the client. (4 marks)
- c) Write short notes on the following.
- i) Standard method of measurement. (3 marks)
- ii) Conditions of contract. (3 marks)
- d) Why bid bond is required for a tender? (3 marks)
- 7 a) What is the role of quantity surveyor during the pre-contract stage? (5 marks)
- b) Why feasibility studies are necessary for construction projects. State three reasons to support the answer. (3 marks)
- c) Explain the basic procedure of tender opening. (3 marks)
- d) Prepare a tender notice for the proposed Office complex of Department of Agriculture. Please make necessary assumptions for the required data and clearly state separately. (9 marks)