

THE PAPUA NEW GUINEA UNIVERSITY OF TECHNOLOGY

THE DEPARTMENT OF ARCHITECTURE AND CONSTRUCTION MANAGEMENT

FIRST SEMESTER EXAMINATION

SECOND YEAR BACHELOR OF CONSTRUCTION MANAGEMENT

CM 210 – QUANTITIES & ESTIMATING I

Room: L2
Date: Tuesday 31st May 2022
Duration: 3 Hours
Time: 8:20 – 11:30 am

Instructions to Candidates

You have 10 minutes to read the paper.
Do not begin writing during this time.

Fill in the Attendance Slip with your name and student I.D. number now

There are six Questions and you are to **answer all questions.**

ALL ANSWERS MUST BE WRITTEN IN THE ANSWER BOOK (S) PROVIDED

Each question must be answered starting on a New Page.

Notes and Textbooks are not allowed in the Test Room.

Only materials allowed and to be brought in by students are;

- Calculators
- Copy of ANZSMM 2018 Edition

WRITE YOUR NAME AND IDENTIFICATION NUMBER CLEARLY ON THE FRONT PAGE. DO IT NOW!

TOTAL MARKS = 98 MARKS

Question One: [16 mark]


State any four (4) duties each of a **Consulting** and **Contracting** Quantity Surveyors.

Question Two: [8 marks]

State and explain any two (2) different types of bill of quantities formats

Question Three: [18 marks]

Explain and give an example of the following terms when taking off a drawing onto a take off sheet

- i) Dotting on
- ii) Deductions
- iii) Sidecast (Waste calculations)
- iv) Referencing (Sign posting)
- v) The "  "Symbol (Ampersand)
- vi) Altering dimensions

Question Four: [24 marks]

Take off the items listed below from the attached drawings.

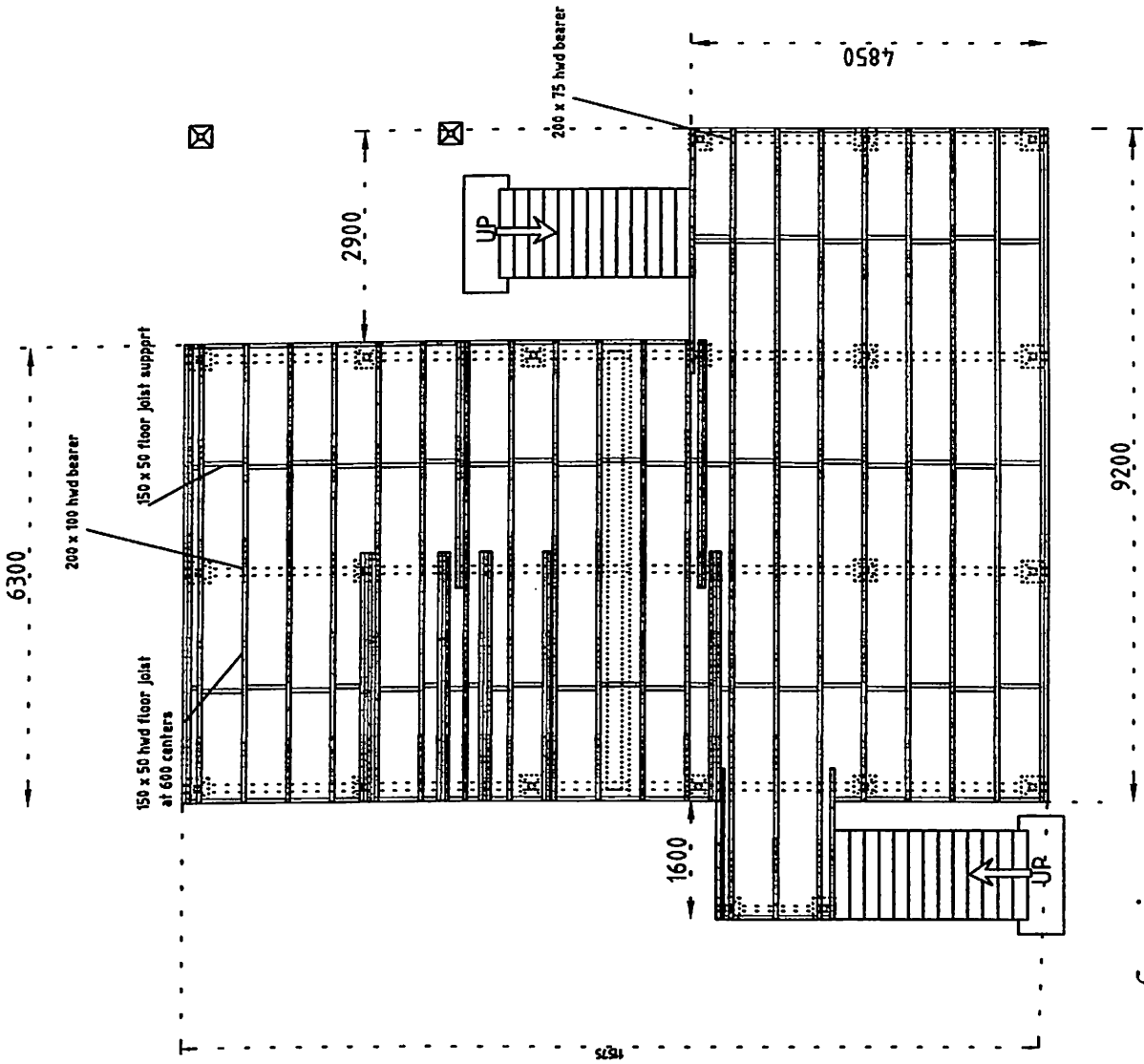
- (i) 200 x 100 hwd bearer
- (ii) 200 x 75 hwd bearer
- (iii) 150 x 50 hwd floor joist
- (iv) 125 x 50 hwd rafters
- (v) 200 x 75 hwd ridge beam
- (vi) 75 x 50 hwd roof purlins
- (vii) 150 x 50 hwd fascia board
- (viii) 150 x 50 hwd barge board

Question Five: [16 marks]

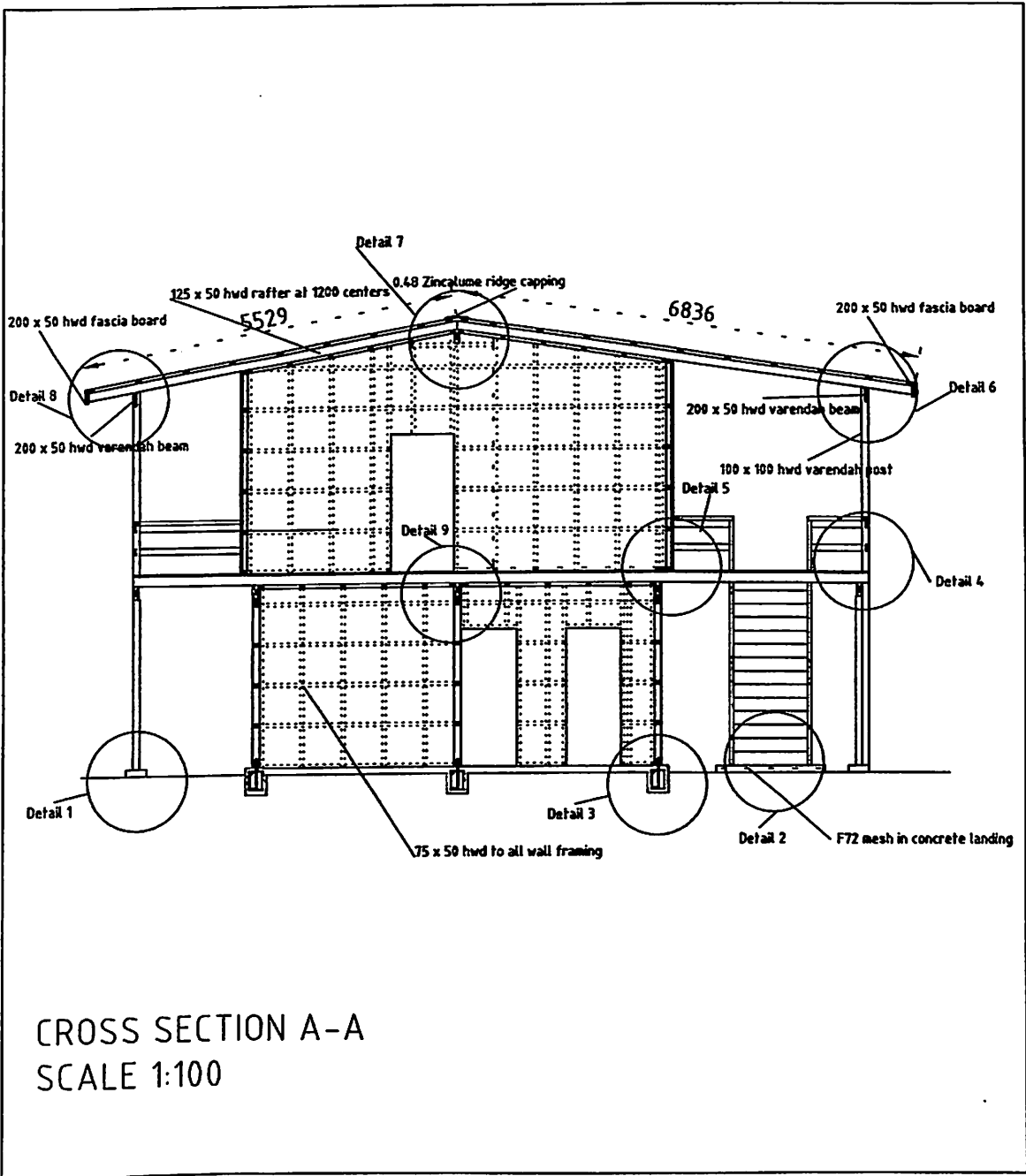
Abstract the take-off items in Question Four (4) onto the Abstracting Sheet by using the Australian and New Zealand Standard Method of Measurement for Building Works 2018 Edition

Question six: [16 marks]

Bill the Abstracted items in Question Five (5) onto the Billing Sheet by using the Australian and New Zealand Standard Method of Measurement for Building Works 2018 Edition



First Floor framing
 Scale 1:100



AUSTRALIAN AND NEW ZEALAND STANDARD METHOD OF MEASUREMENT OF BUILDING WORKS 2018 EDITION



20. CARPENTRY

INFORMATION TO BE INCLUDED

1. Refer to Introduction, General Rules and Recommendations
2. Refer to relevant Specification sections containing particulars of carpentry
3. Particulars will be given of timber sizes, stating whether sawn or dressed and that unless described as finished, all sizes given are nominal
4. Composite timber framed partitions may be measured in accordance with Section 21 Partitions

MEASUREMENT RULES

- M1. measure separately each species, type or grade of timber
- M2. describe appearance grade timber of work required to be selected and kept clean for clear finish
- M3. describe work tongued, housed, glued or secret fixed
- M4. describe work fixed by any method other than nailing including type and size of fixing and spacing
- M5. describe labours with relevant classification item
- M6. measure and describe separately timbers impregnated with creosote or similar preservatives applied under pressure
- M7. describe joinery items primed or prefinished before delivery to site

MEASUREMENT & PRICES

P1. measurement and prices deemed to include for: all labours in framing, notching and fitting around projections, pipes, light fittings, hatches, grilles and similar complete with all cleats, packers, wedges and similar and all nails and screws

DEFINITIONS

D1. labours such as rebating, grooving, chamfering, splaying, bevelling, tapering, bulinosing, moulding and similar items

CLASSIFICATION TABLE

CLASSIFICATION TABLE			MEASUREMENT RULES	MEASUREMENT & PRICES	DEFINITIONS
3. angle fillets 4. grounds 5. battens 6. similar items	1. stating size	m			
7. fascia boards 8. barge boards					
9. insulation	1. walls 2. ceilings	m ²	1. stating thickness or thermal rating 1. including wire mesh, battens or similar items required for fixing	M15. where placed or fixed between joists, studs, rafters and similar items measure area over such members and state to this effect	D2. insulation in granular form or in sheets, quilts, batts, etc
10. boarding	1. floors 2. walls 3. ceilings 4. roofs 5. dormer cheeks 6. gutters 7. fascias 8. similar items		1. stating thickness 2. laid to slope 3. laid diagonally	M16. measure in m where ≤250mm wide except where caused by openings	
	9. raking cutting 10. circular cutting 11. mitres	m		M17. measure each side	

CLASSIFICATION TABLE				MEASUREMENT RULES	MEASUREMENT & PRICES	DEFINITIONS
1. structural timbers	1. plates 2. bearers 3. joists 4. studs 5. beams 6. purlins 7. rafters 8. similar items	m	1. timber > 3.6m long in increments: >3.6m ≤6.0m, >6.0m ≤7.5m, >7.5m ≤9.0m, or in suitable increments to suit local requirements	1. stating size and stress grade	M8. group in locations of framing (a) ground floor (b) upper floor (c) wall (d) ceiling (e) roof (f) similar areas M9. may measure same size timbers together stating members	
	9. nogging 10. solid bridging 11. herringbone strutting 12. similar strutting				M10. measure horizontally over main members where cut between studs or joists M11. measure separately nogging, framing, etc, for fixing of fittings, fixtures and similar items	
2. prefabricated roof trusses		no	1. stating type or shape and size 2. stating centres of trusses, type of roof covering and the type of ceiling construction and finish	1. stating nominal span to external faces of the bearings and the actual span where foreshortened 2. stating amount of camber shown or specified 3. stating the height, alternatively, the pitch in degrees or the rate of slope 4. stating the horizontal overhangs 5. stating the height of bearing ends	M12. measure height from underside of bottom chord to underside of top chord M13. measure overhangs from the external faces of the bearings M14. measure height of bearing ends above ground or other convenient level for the purpose of hoisting and fixing	P2. measurement and prices deemed to include for: all multiple nail plates, splice plates, timber connectors, bolts and similar items