basic education

Department:
Basic Education
REPUBLIC OF SOUTH AFRICA

SENIOR CERTIFICATE EXAMINATION/ NATIONAL SENIOR CERTIFICATE EXAMINATION

CIVIL TECHNOLOGY: CONSTRUCTION

MAY/JUNE 2026

MARKING GUIDELINES

MARKS: 200

These marking guidelines consist of 16 pages.

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INSTRUCTIONS FOR MARKERS

1. Markers should:

- Familiarise themselves with the question and answer before evaluating the responses of candidates.
- Always interpret the responses of the candidates within the context of the question.
- Consider any relevant and acceptable answer during pre-marking but should strictly adhere to the answers after finalisation of the marking guideline.
- There are TWO approaches to answering describe and explain type of questions.
    1. If a candidate is required to explain e.g., a process in a prescribed number of steps (e.g. 3 steps), only the first required number of responses should be considered.
    2. However, if for example candidate is required to explain or describe a process, we need to consider that candidates may write a long description, not necessarily well organised. In this case the marker needs to evaluate the complete statement to judge if the candidate explained the required outcome satisfactorily and allocate marks on merit.

    Answering short questions.

    1. Bullet Form Answers: When a candidate provides their answers in bulleted points, each bullet should be treated as a single answer. Award 1 mark for each complete bulleted response.
    2. Paragraph Form Answers: When a candidate provides answers in paragraph form, the response should be evaluated based on the accuracy and completeness of each fact presented. Award marks for each distinct fact or point made, ensuring that each fact is correctly articulated.
- Mark what the candidate wrote and do not interpret or predict responses.
- Indicate the tick or cross right at the position where the mark needs to be awarded or where the candidate made the error.
- Accept the letter corresponding with the correct answer as well as the answer written in full in multiple-choice questions or similar questions.
- Accept incorrect spelling in answers unless the spelling changes the meaning of the answer.
- If a learner writes two or more answers separated by a slash (/) mark only the first response, unless the additional answer/s are different names for the same item, e.g. Yale lock/Night latch. In this case, the answer for the response should be awarded and the slash (/) should NOT be considered as an additional answer.

2. For calculations:

- A mark is only awarded if the correct unit is written next to the answer. If the question states that the answer must be in a specific unit, a mark will be awarded even if the answer is indicated without the unit.
- Marks will only be allocated for the correct values if the candidates add instead of multiply. NO marks will be awarded for the calculations and the answer.

- Where an incorrect answer is correctly carried over, the marker must recalculate the values, using the incorrect answer from the first calculation. If correctly used, the candidate should receive the full marks for subsequent calculations.
- Alternative methods of calculations must be considered, provided that the correct answer is obtained.
- For the calculation of quantities marks will be awarded for the correct use of the dimension paper.

3. When marking drawings:

- The member for which the mark should be awarded should be drawn correctly in the correct position to receive a mark.
- A member incorrectly drawn but wrongfully repeated in another position will be awarded the mark for the repeated incorrect member provided that the marking guideline provides for TWO or more marks for that member (positive marking).
- Marks can only be awarded for a label if the label is correctly indicating the correct member. Do not consider labels for members of which the labels were provided on the answer sheet.
- Scale drawings should always be marked using an appropriate mask.
- If the incorrect/wrong drawing was drawn, the candidate can be awarded for only what was provided for on the marking guideline.
- If a line diagram or an orthographic view instead of a pictorial drawing (isometric/oblique/perspective) is drawn, the first assessment criteria for each member will be marked wrong, but marks will be awarded for the subsequent members if TWO or more marks are awarded for the same member.
- If candidates draw/give more information than what is required, mark strictly according to the assessment criteria. However, if the additional information alters or contradicts the correct response, the answer should be marked as incorrect.

4. Incorrect numbering of questions:

- If a candidate numbered incorrectly, but the answer is in the correct position according to the sequence of the questions in the question paper, circle the incorrect numbering and mark the response.
- If questions were answered randomly not following the same sequence as in the question paper and the learner numbered incorrectly, the response should NOT be marked.

5. Duplication of responses and questions answered in the correct place:

- If a question is answered twice, mark the first response.
- If a question should be answered on an answer sheet and the candidate answered it on both the answer sheet and in the answer book, mark the response on the answer sheet and cancel the response in the answer book.

QUESTION 1: OHSA, MATERIALS, TOOLS, EQUIPMENT AND JOINING (GENERIC)

1.1 1.1.1 twice a year ✓ (1)

1.1.2 3 m ✓ (1)

1.1.3 Guard rails ✓ (1)

1.1.4 after bad weather ✓ (1)

1.1.5 1,8 m ✓ (1)

1.1.6 using a conveyer belt ✓ (1)

1.1.7 once a week ✓ (1)

1.1.8 non-skid devices ✓ (1)

1.1.9 510 mm ✓ (1)

1.1.10 crank ✓ (1)

1.2 C ✓ (1)

1.3 Rawl bolts are purchased according to:
- Anchor name ✓
- Thread diameter/Thread size ✓
- Fixture thickness/Size
- Length

ANY TWO OF THE ABOVE (2)

1.4 1.4.1 Types of paint:
- Water based paint ✓
- Oil based paint ✓ (2)

1.4.2 Reasons for painting a ceiling:
- Protects the surfaces from moisture penetration ✓
- Protects the materials against decay ✓
- To preserve the material
- Aesthetic/Decorative purposes

ANY TWO OF THE ABOVE (2)

1.5 Consequence of not setting a laser level up properly:
- The laser level can be knocked over ✓
- Accuracy can be impaired
- Readings will be inaccurate

ANY ONE OF THE ABOVE (1)

1.6 The laser level must be calibrated. ✓ (1)

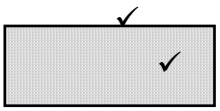
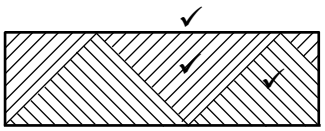
1.7
- Place the telescope in its case after use. ✓
- Ensure the lenses are free from dust/Clean the lenses

ANY ONE OF THE ABOVE (1)

[20]

QUESTION 2: GRAPHICS AS MEANS OF COMMUNICATION (GENERIC)

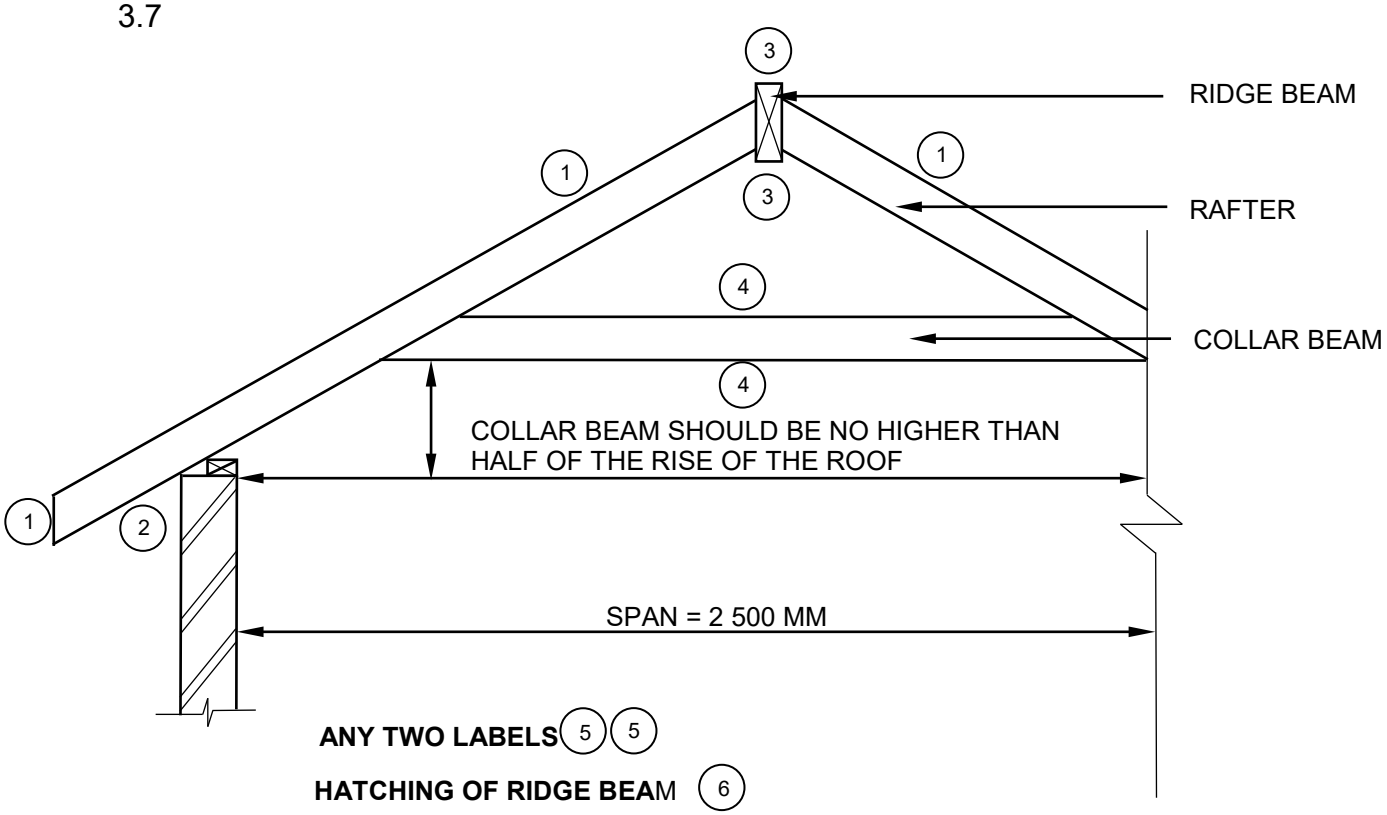
NO.	QUESTIONS	ANSWERS	MARKS
1.	What elevation is indicated in FIGURE **A**?	South elevation/South/S ✓	1
2.	Identify number **1**.	Ridge/Ridge capping ✓	1
3.	Identify number **2**.	Barge board ✓	1
4.	Identify number **3**.	Fascia board ✓	1
5.	What does the abbreviation FFL in FIGURE **A** represent?	Finished floor level ✓	1
6.	Write down the abbreviation for number **5**.	NGL ✓	1
7.	Identify number **6**.	Step ✓	1
8.	Identify number **7** and indicate the total number of this fixture that is installed in the building.	• Garage door/Roll-up door/Tip-up door ✓ • 3/Three ✓	2
9.	What is the distance between the wall and the end of the roof as indicated by number **8** called?	Overhang ✓	1
10.	Explain the purpose of number **9**.	To cover the dwelling/To protect the building against rain and elements of nature ✓	1
11.	How many one-way double-pole switches are in the dwelling?	1/One ✓	1
12.	How many water closets are installed in the building?	2/Two ✓	1
13.	Name TWO electrical installations that are omitted at number **10**.	• Lights ✓ • Switches ✓ • Electrical wiring **ANY TWO OF THE ABOVE**	2
14.	Identify number **11**.	Sink unit – single/Sink ✓	1
15.	Deduce, from the notes column, the type of roof illustrated in FIGURE **A**.	Gable roof ✓	1

16.	Deduce, from the notes column, what must be installed below each window.	Fibre-cement window sills ✓	1
17.	What type of material should number **4** be manufactured of?	Aluminium ✓	1
18.	Deduce, from the notes column, the dimensions of window **1**.	1 800 ✓ x 1 200 ✓/ 1 800 mm x 1 200 mm **OR** 1,8 m x 1,2 m	2
19.	On which plot will the new dwelling be erected?	Plot 27✓	1
20.	Draw the symbol for plaster.		2
21.	Draw the symbol for earth fill.		3
22.	Calculate the floor area of the bathrooms that needs to be tiled. Give your answer in square metres and show ALL calculations.	= 2 ✓ m x 1,5 ✓ m = 3 ✓ m² = 3 m² x 2 ✓ = 6 ✓ m² **OR** = 2 m x 3 m = 6 m² **OR** = 2 000 x 1 500 = 3 000 000 x 2 = 6 000 000 = 6 m²	5
23.	Calculate the total length of the wall on the western side of the building. Give your answer in metres and show ALL calculations.	= 220 ✓ + 5 000 ✓ + 110 ✓ + 1 500 ✓ + 110 ✓+ 1 500 ✓ + 220 ✓ mm = 8,66 ✓ m	8
		TOTAL:	**40**

QUESTION 3: ROOFS, STAIRCASES AND JOINING (SPECIFIC)

3.1	3.1.1	Batten ✓	(1)
	3.1.2	650 mm ✓	(1)
	3.1.3	Roof underlay ✓	(1)
	3.1.4	• Corrugated sheets/IBR sheets ✓ • Purlins ✓	(2)
3.2	3.2.1	200 ✓	(1)
	3.2.2	280 ✓	(1)
	3.2.3	Apron ✓	(1)
	3.2.4	Screws/Rawl bolts/Bolts ✓	(1)
	3.2.5	100 ✓	(1)
	3.2.6	SANS ✓	(1)
3.3	Types of cast-in anchors: • L-bolt ✓ • J-bolt ✓ • Hex head bolt with washer **ANY TWO OF THE ABOVE**		(2)
3.4	600 mm ✓		(1)
3.5	Types of roof trusses: • SA-Howe truss ✓ • King post truss ✓		(2)
3.6	3 metres/3 000 mm ✓		(1)

3.7



ANY TWO LABELS (5) (5)

HATCHING OF RIDGE BEAM (6)

APPLICATION OF SCALE (7) (7)

DRAWING NOT TO SCALE
USE A MASK TO MARK THIS QUESTION

NO.	ASSESSMENT CRITERIA	MARK
1	Rafters	3
2	Overhang	1
3	Ridge beam	2
4	Collar beam (placement = 1 + part = 1)	2
5	Any TWO labels	2
6	Hatching of ridge beam	1
7	Application of scale: All correct = 2 ONE incorrect = 1 TWO and more incorrect = 0	2
	TOTAL:	**13**

(13)
[30]

QUESTION 4: EXCAVATIONS, FORMWORK, TOOLS, EQUIPMENT AND MATERIALS (SPECIFIC)

4.1 4.1.1 Ready-mix concrete ✓ (1)

4.1.2 Line pump ✓ (1)

4.1.3 Slump test ✓ (1)

4.1.4 Cube test ✓ (1)

4.1.5 Curing of concrete ✓ (1)

4.2 4.2.1 The excavation can collapse. ✓ (1)

4.2.2 600 mm ✓ (1)

4.2.3 The excavator can be prevented from coming to close by making use of:
- Wheel stopper ✓
- Barricades ✓
- Stop logs
- Hand signals
- Mechanical signals

ANY TWO OF THE ABOVE (2)

4.2.4 When working in trenches deeper than 1,5 m:
- The sides of the trench should be braced. ✓
- Test for atmospheric hazards. ✓
- Sides should be protected with formwork.
- Provide a safe entry and exit to the trench

ANY TWO OF THE ABOVE (2)

4.2.5 The excavation site should be:
- Covered/Fenced off at the end of the day. ✓
- Warning lights must be lit up. ✓ (2)

4.2.6 Trenches must be inspected. ✓ (1)

4.3 Formwork is a mould/box in which concrete is cast. ✓ (1)

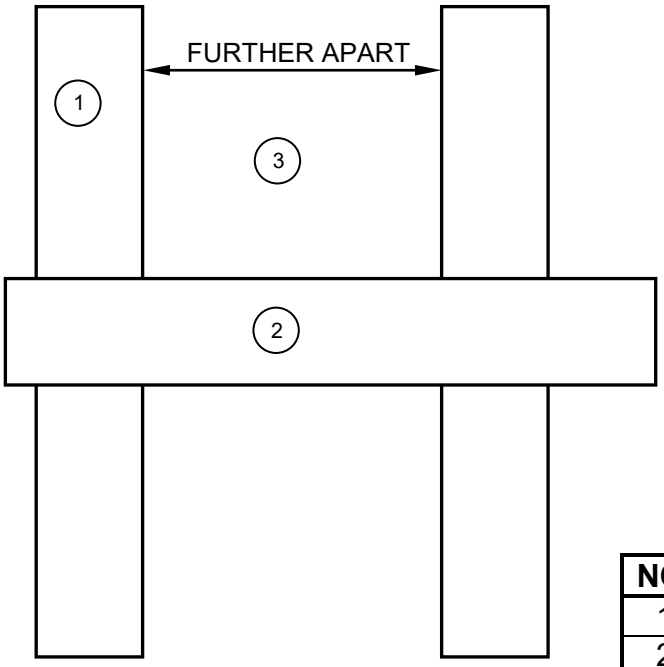
4.4 Soleplate ✓ (1)

4.5 Folding Wedges/Pair of wedges/Wedges ✓ (1)

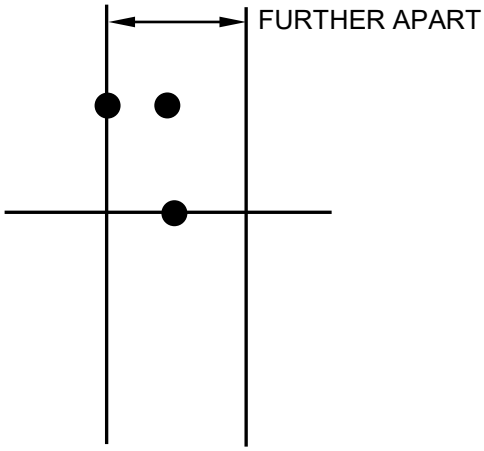
4.6
- The formwork can leak. ✓
- The striking process can be delayed if other methods of joining was used. ✓
- The formwork members can be damaged so that it cannot be re-used.

ANY TWO OF THE ABOVE (2)

4.7

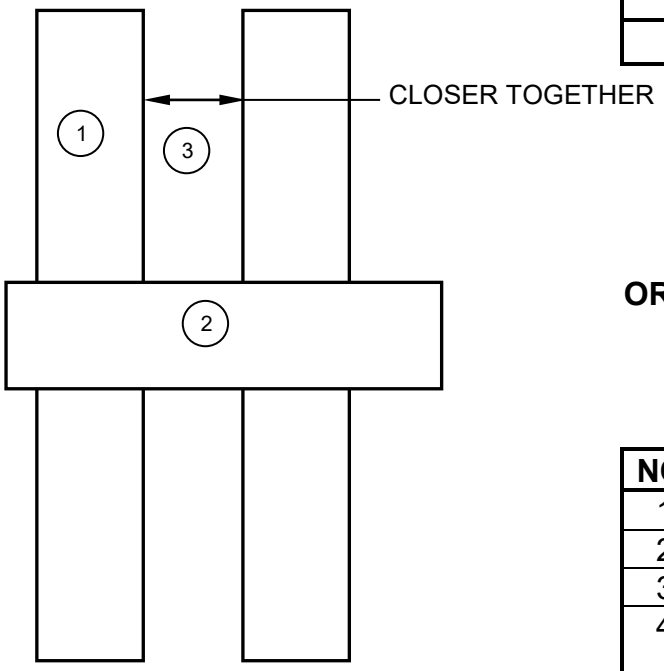


OR

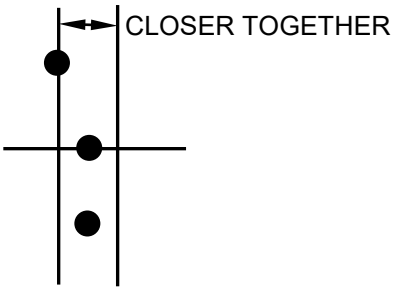


SHUTTERING FOR FIRM SOIL (4)

NO.	ASSESSMENT CRITERIA	MARK
1	Poling board	1
2	Walling board	1
3	Larger spacing	1
4	Title (Correct title to match drawing)	1
	TOTAL:	**4**



OR



SHUTTERING FOR LOOSE SOIL (4)

NO.	ASSESSMENT CRITERIA	MARK
1	Poling board	1
2	Walling board	1
3	Closer spacing	1
4	Title (Correct title to match drawing)	1
	TOTAL:	**4**

(8)

4.8 4.8.1 Power trowel float/Power float ✓ (1)

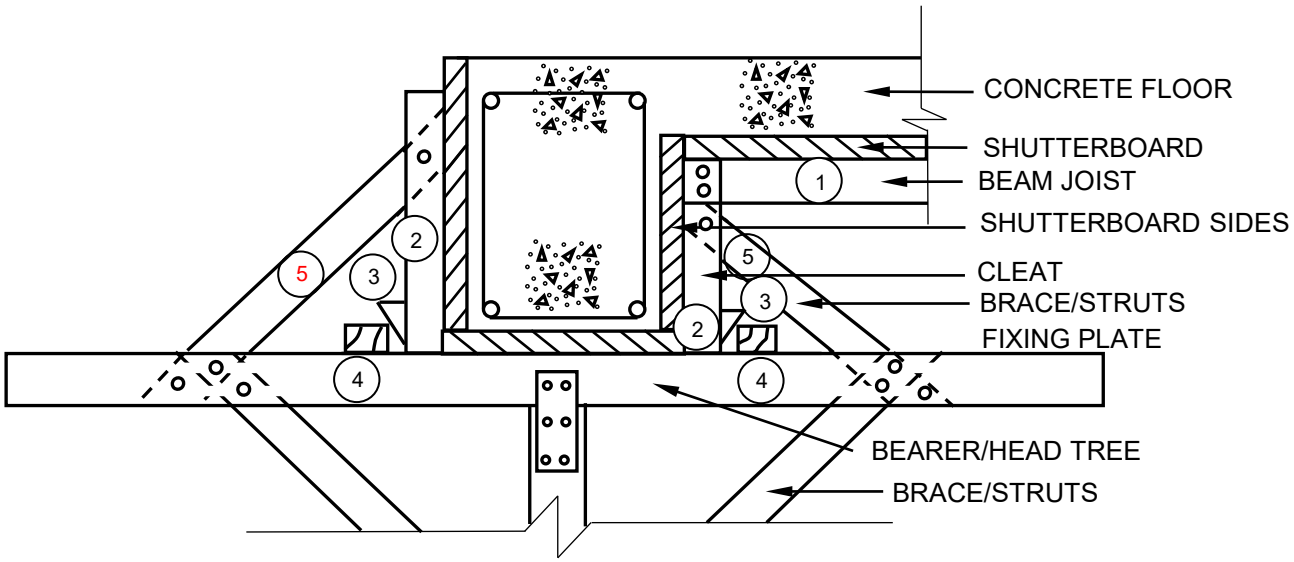
4.8.2 Care of machine:
- Clean after use ✓
- Ensure all parts are firmly attached

ANY ONE OF THE ABOVE (1)

4.8.3 When handling a power float, the operator should:
- Use appropriate PPE. ✓
- Never use a defective machine. ✓
- Check the controls of the machine for proper response before using it.
- Never put their hands or feet near moving parts.
- Not make any adjustments when the machine is moving.
- Use both hands.
- Have a firm and balanced stance.

ANY TWO OF THE ABOVE (2)

4.9



NO.	ASSESSMENT CRITERIA	MARK
1	Beam/Joist for the floor slab	1
2	Cleats	2
3	Wedges	2
4	Fixing plates	2
5	Braces/Struts	2
	TOTAL:	**9**

(9)
[40]

QUESTION 5: PLASTER AND SCREED, BRICKWORK AND GRAPHICS AS MEANS OF COMMUNICATION (SPECIFIC)

5.1 5.1.1 F ✓ (1)

5.1.2 J ✓ (1)

5.1.3 G ✓ (1)

5.1.4 H ✓ (1)

5.1.5 B ✓ (1)

5.1.6 E ✓ (1)

5.1.7 C ✓ (1)

5.1.8 A ✓ (1)

5.2 5.2.1 Wall tie ✓ (1)

5.2.2 Different types of wall ties:
- Butterfly pattern ✓
- Nylon wall tie
- Twisted pattern
- Double triangular pattern

ANY ONE OF THE ABOVE (1)

5.2.3 50–100 mm ✓ (1)

5.2.4 Benefits of a cavity in a wall:
- Prevent water from penetrating the inner skin of the wall. ✓
- Provides insulation against heat. ✓
- Provides insulation against cold.
- Provides insulation against sound.

ANY TWO OF THE ABOVE (2)

5.2.5 Above the horizontal damp proof course (DPC) of the external part of the wall. ✓ (1)

5.2.6 Consequences if weep hole fails to drain water:
- Water will accumulate inside the wall causing damage. ✓
- The moisture will penetrate the inner wall and the paint will start peeling off.

ANY ONE OF THE ABOVE (1)

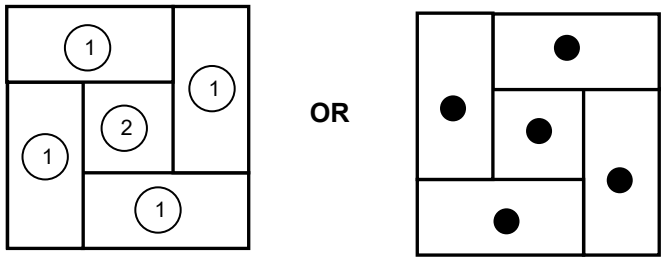
5.2.7 Reasons why it is expensive to build a cavity wall:
- It requires expert design/higher design standards.✓
- It requires highly skilled workmanship. ✓
- Constant supervision is needed during construction.
- More time consuming.

ANY TWO OF THE ABOVE (2)

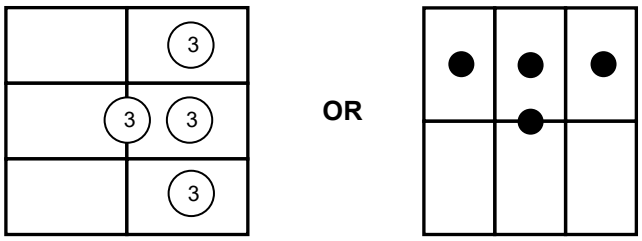
5.3 Reasons for brick paving construction failures:
- The concrete haunch is too thin to support itself and cracks or crumble under pressure ✓
- There is too little weight to retain the structure and keep the paving in place ✓
- The bond between the haunch and the edge units is weak and will easily crumble
- The sub-base is not contained and will be washed out by ground water

ANY TWO OF THE ABOVE (2)

5.4



STRETCHER BOND



ENGLISH BOND

SCALE 1 : 10 (4) (4)

USE A MASK TO MARK THIS QUESTION

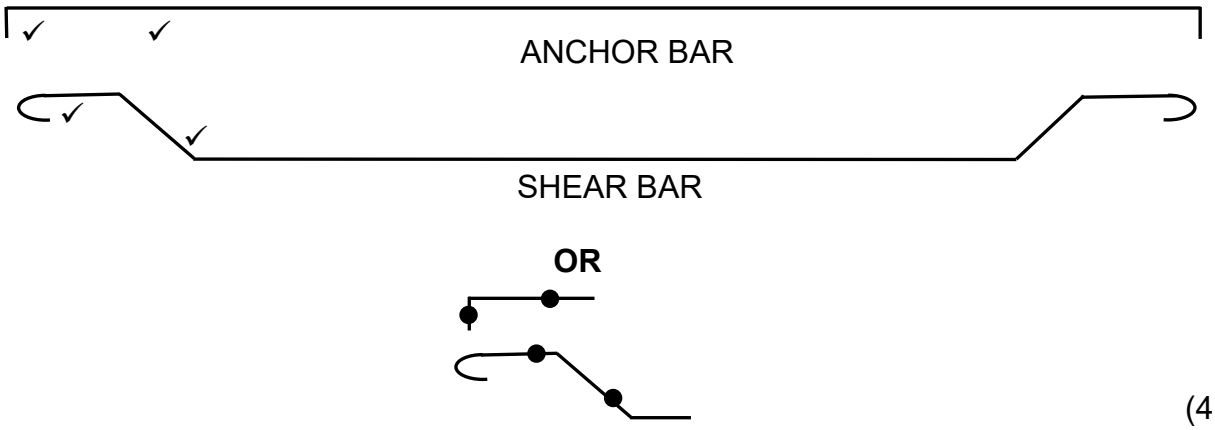
NO.	ASSESSMENT CRITERIA	MARK
1	Stretcher bond	4
2	Cavity in stretcher bond	1
3	¾ bricks in English bond	4
4	Application of scale: All correct = 2 ONE incorrect = 1 TWO and more incorrect = 0	2
	TOTAL:	**11**

(11)
[30]

QUESTION 6: REINFORCEMENT IN CONCRETE, FOUNDATIONS, CONCRETE FLOORS AND QUANTITIES (SPECIFIC)

6.1	6.1.1	A ✓	(1)
	6.1.2	C ✓	(1)
	6.1.3	A ✓	(1)
	6.1.4	B ✓	(1)
	6.1.5	D ✓	(1)
6.2	6.2.1	Rib and block floor ✓	(1)
	6.2.2	A – Concrete topping/Concrete ✓ B – Welded mesh/Reinforcing mesh/Reinforcing ✓ C – Reinforced rib/Rib ✓ D – Hollow block/Block ✓	(4)
	6.2.3	Prop/Strut/Adjustable prop ✓	(1)
6.3	6.3.1	Main ✓	(1)
	6.3.2	Compression ✓	(1)
	6.3.3	Structural engineer/Engineer ✓	(1)
	6.3.4	higher ✓	(1)
	6.3.5	Plastic/Steel/Concrete ✓	(1)
6.4	6.4.1	A – Stirrup/Binder ✓ B – Concrete symbol/Concrete ✓	(2)
	6.4.2	• To prevent rusting (corrosion) of reinforcement. ✓ • To ensure the strength of the structure. **ANY ONE OF THE ABOVE**	(1)
	6.4.3	Methods of joining the steel bars: • Crosswise method ✓ • Hair knot method ✓ • Crown method **ANY TWO OF THE ABOVE**	(2)

6.4.4



(4)

6.5 Advantages of using pile foundations, are:

- It can be used in poor soil. ✓
- It can be used in water. ✓
- It is stable with an enlarged base. ✓
- It is relatively quick and easy to install.
- It is a time saver if pre-fabricated piles are used.
- It is good at resisting tensile stress.
- It is less expensive to produce.
- That it can be manufactured of site.
- It is possible for installation to continue in bad weather.
- It is possible to adjust the length depending on circumstances.
- It is good at resisting against moving soil.

ANY THREE OF THE ABOVE (3)

6.6.1

A	B	C	D
			Length of roof:
			= 12 500 mm ✓+ 2/150 mm ✓
			= 12 800 mm ✓
			OR
			= 150 mm + 12 500 mm + 150 mm
			= 12 800 mm
			Area of roof underlay needed:
2/ ✓	12,8 ✓		
	2,95 ✓	75,52✓ m²✓	

(8)

6.6.2

A	B	C	D
			Total length of fascia board needed:
2/ ✓	12,8 ✓	25,6 m ✓	
			Correct use of dimension paper ✓

(3)

(1)

[40]

TOTAL: 200

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