NAMIBIA UNIVERSITY
OF SCIENCE AND TECHNOLOGY

FACULTY OF ENGINEERING AND THE BUILT ENVIRONMENT

DEPARTMENT OF LAND AND SPATIAL SCIENCES

QUALIFICATION(S): BACHELOR OF PROPERTY STUDIES DIPLOMA IN PROPERTY STUDIES	
QUALIFICATION(S) CODE: 08BOPS 06DIPS	**NQF LEVEL:** 5
COURSE CODE: BCS512S	**COURSE NAME:** BUILDING CONSTRUCTION
EXAMS SESSION: DECEMBER 2025	**PAPER:** THEORY
DURATION: 3 HOURS	**MARKS:** 100

SECOND OPPORTUNITY/SUPPLEMENTARY EXAMINATION QUESTION PAPER	
EXAMINER(S)	MS ELINA TEODOL
MODERATOR:	MR VERINJAERAKO KANGOTUE

INSTRUCTIONS

1. Read the entire question paper before answering the Questions.
2. Please write clearly and legibly!
3. The question paper contains a total of **5 questions.**
4. You must answer **ALL QUESTIONS.**
5. Detach Appendix A after completing it and submit it with the Examination Booklet(s).
6. Make sure your Student Number is on the EXAMINATION BOOK(S).

PERMISSIBLE MATERIALS

1. Non-programmable Scientific Calculator

THIS QUESTION PAPER CONSISTS OF 10 PAGES (Including this front page)

Question 1

For each of the following statements indicate whether it is *'TRUE'* or *'FALSE'*. Each correct answer carries 1 mark.

1.1 A clerk of works is a person or firm who undertakes to complete a building project in accordance with the contract documents on behalf of an employer and has full control of all operations on site.

1.2 The foundation in which isolated slab are constructed to support each column with its own base is known as Pad footings

1.3 When clearing a site, only bushes and trees need to be removed.

1.4 In ordinary residential and public building, the Damp Proof Course (DPC) is generally provided at plinth level.

1.5 In floor construction, floor systems must transfer their loads horizontally across space to either beams or columns or to bearing walls.

1.6 Settlement in buildings occurs when bearing pressure exceeds bearing capacity brought about by either design or ill-considered alterations.

1.7 Membrane Structure refers to structures where non-structural membranes act as walls and roofs supported by tension or compression members, like tents.

1.8 Raft footing is the type of foundation generally provided in soils possessing low bearing capacity.

1.9 Retaining wall is a wall constructed to resist the pressure of an earth filling.

1.10 The traditional set-up of the building team in the construction industry includes the employer and architect only.

1.11 Any foundation may fail as a result of subsidence caused by underground mining and increase in the water table only.

1.12 The device that provides for flushing of water and receiving of excrement is known as Water Closet (WC's).

1.13 The performance requirements of any building include among others its appearance and sound control, dimensional suitability, weather exclusion and fire protection.

1.14 System building (Closed system Building) refers to a method of erecting a building based on the form of construction in which the component parts of the building fabric are partly factory produced.

1.15 Slenderness ratio is the proportional relationship between thickness of walls and their foundations width.

1.16 In building construction working on sloping sites refers to 'reducing floor analyses'.

1.17 Party wall refers to a wall separating two detached properties that are in separate ownership such as in terraced houses.

1.18 A Building Compliance Certificate is required before legal occupation of a property.

1.19 A pile foundation is only suitable for small residential houses.

1.20 A damp proof membrane prevents water penetration into walls.

[20]

Question 2

Choose the correct answer for each of the following multiple-choice questions. Each correct answer carries 1 mark. (14)

2.1 What is a drawing or building plan/blueprint?

a) A design of an interior of a room

b) A rough sketch of a structure

c) A scaled drawing of a building, room, or home showing major placements

d) A piece of art representing a building

2.2 Which among the following is NOT included in a complete set of blueprints?

a) Roof plan

b) Colour palette

c) Elevation drawings

d) Electrical layout

2.3 A sketch should be:

a) Always to scale

b) Small to save space

c) Fairly large to show sufficient details

d) Incorrect in proportions

2.4 Why are building drawings important?

a) For the owner to see how the structure will look

b) For the valuer to determine the property value on completion

c) To form an effective means of communication for building projects

d) All of the above

2.5 What purpose do graphical symbols in a drawing serve?

a) To make the drawing more artistic

b) To represent different materials in the construction

c) To indicate the type of paint used

d) To show the type of soil on the site

2.6 Which of the following drawings provides layout plans and details for construction of each part of the building?

a) Architectural drawings

b) Structural drawings

c) Electrical drawings

d) Plumbing drawings

2.7 What is a working drawing used for?

a) Representing the aesthetic view of a building

b) Marking out the plan on the ground

c) Conveying the designer's requirement to the contractor

d) Showing the topography of the site

2.8 What type of drawing is used to briefly show the general design of a structure?

a) Isometric drawing

b) Orthographic drawing

c) Pictorial drawing

d) Elevation drawing

2.9 Which drawing provides details about the electrical fixtures and wiring path?

a) Architectural drawing

b) Structural drawing

c) Electrical drawing

d) Plumbing drawing

2.10 Finishing drawings contain details about:

a) The foundation of a building

b) The electrical layout of a building

c) The appearance of a building, like tiles or marbles

d) The plumbing system of a building

2.11 Which of the following is NOT included in a complete set of blueprints?

a) Elevation drawings of each side of the structure

b) A complete electrical layout

c) Colour scheme of the building

d) A roof plans

2.12 What is a sketch in building terms?

a) A miniature model of a building

b) A free-hand drawing which may not be to scale

c) A technical drawing with exact dimensions

d) A digital representation of a building

2.13 Why are building drawings important?

a) Solely for the architect's record

b) For the owner to obtain building approval from the local authority

c) Only for artistic presentation

d) For the contractor to know the colour scheme

2.14 In building drawings, what do thick lines usually represent?

a) Locations of doors and windows

b) Site outline of new buildings

c) Electrical pathways

d) Air conditioning vents

[14]

Question 3

3.1 A site measures 30m by 20m. Calculate the total plot area. (1)

3.2 If a rectangular building measures 10m × 12m, with a wall thickness of 0.25m, calculate the internal usable area. (2)

3.3 Construction cost for a house of 85m² at N$6,200/m². Calculate the total cost. (2)

3.4 A residential building is being constructed, and the initial cost estimate for roofing materials (timber, steel trusses, and roofing sheets) was N$150,000. However, due to market fluctuations, the cost of steel trusses has increased by 20%, while the cost of timber and roofing sheets remains constant.

Questions:

If the steel trusses originally made up 50% of the total roofing material cost, calculate the new total cost of the roofing materials. (4)

3.5 A property developer is constructing a block of flats and estimates that the cost to build is N$8,000 per square meter, based on current labour and material costs. The flats are designed to have a total floor area of 1,200 square meters.

Questions:

3.5.1 Calculate the total estimated building cost for the block of flats. (3)

3.5.2 If the developer decides to add an additional 10% to the total floor area, how much will the total building cost increase? (3)

3.6 After completing 70% of the project, the developer faces a shortage in funds. Suggest two ways the project team can reduce building costs for the remaining 30% without compromising the structural integrity of the building. (4)

3.7 A client has requested additional features in the construction of their office building, including the installation of more expensive imported tiles and custom lighting fixtures. The original budget for tiles was N$100,000, and for lighting, N$50,000. The imported tiles will cost N$180,000, and the custom lighting fixtures N$80,000.

Questions:

3.7.1 Calculate the total cost overrun for the tiles and lighting fixtures. (3)

3.7.2 If the client has a strict budget and can only increase their total costs by N$50,000, what adjustments could you propose to meet the client's budget? (4)

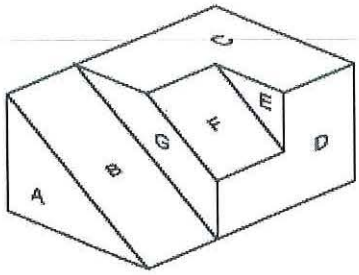
3.7.3 As a project manager, discuss the potential long-term implications (financial and time-related) of agreeing to the client's requested changes. (3)

3.8 Outline the six (6) functions of external walls of a building. (6)

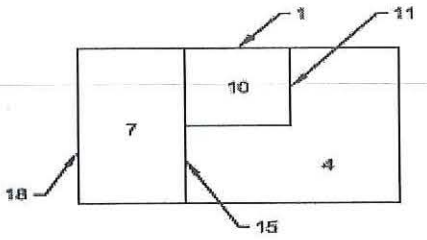
[35]

Question 4

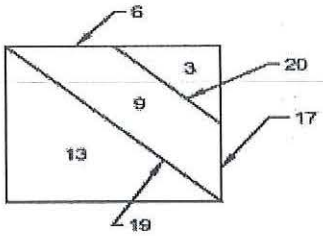
Use the isometric Object below and its corresponding multiview in orthographic (two dimension) drawings to complete the table attached as Appendix A. (18)



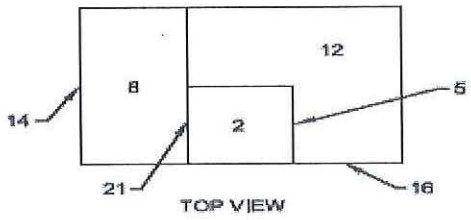
	A	B	C	D	E	F	G
F		7					
T		8					
S		19					



FRONT VIEW



SIDE VIEW



TOP VIEW

[18]

Question 5

5.1 Draw the following types of buildings components and label them appropriately:

5.1.1 A Header bond and Stretcher bond (3)

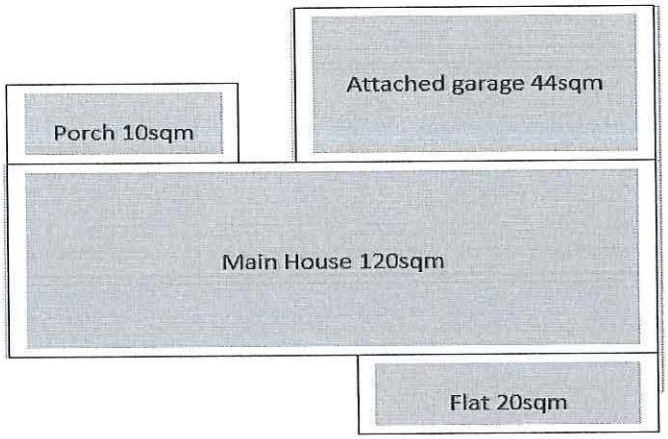
5.1.2 A Deep strip foundation and a Pad foundation. (3)

5.1.3 Symmetrical Lattice roof and Asymmetrical Lattice roof (2)

5.2 Use the building sketch provided below to answer the following questions: (5)

5.2.1 What is the Total Floor Area (2.5)

5.2.2 What is the Total Built-up Area (2.5)


Attached garage 44sqm
Porch 10sqm
Main House 120sqm
Flat 20sqm

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APPENDIX A

NOTE - Please detach this sheet after completion and insert it inside the last page of the examination answer booklet for submission.

STUDENT NUMBER:.....

Use this table to answer Question 4.

	A	B	C	D	E	F	G
F		7					
T		8					
S		19					