



**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: 6
COURSE CODE: BCS521S	COURSE NAME: BUILDING CONSTRUCTION
EXAMS SESSION: JANUARY 2024	PAPER: THEORY
DURATION: 3 HOURS	MARKS: 100

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

<p style="text-align: center;">INSTRUCTIONS</p> <ol style="list-style-type: none">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 <u>ALL QUESTIONS</u>.5. The question paper contains appendices A. Detached, complete, insert and submit it with the Examination Book (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 11 PAGES (Including this front page)

Question 1

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

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. 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

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

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

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
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
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
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
9. Which drawing provides details about the electrical fixtures and wiring path?
- a) Architectural drawing
 - b) Structural drawing
 - c) Electrical drawing
 - d) Plumbing drawing
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

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
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
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
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 2

For each of the following statements indicate whether it is 'TRUE' OR 'FALSE'. Each correct answer carries 1 mark. (20)

- a) 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.
- b) The foundation in which isolated slab are constructed to support each column with its own base is known as Pad footings.
- c) Mortar should be slightly harder than bricks so that if any movement of wall occurs the mortar will crack rather than bricks.
- d) When clearing a site, only bushes and trees need to be removed.
- e) In ordinary residential and public building, the Damp Proof Course (DPC) is generally provided at plinth level.
- f) In floor construction, floor systems must transfer their loads horizontally across space to either beams or columns or to bearing walls.
- g) Settlement in buildings occurs when bearing pressure exceeds bearing capacity brought about by either design or ill-considered alterations.
- h) Membrane Structure refers to structures where non-structural membranes act as walls and roofs supported by tension or compression members, like tents.
- i) Multi-span lattice roof is a remedy to an increased height of the apex of a roof due to an increase in span of a building. This results in the creation of a large usable roof space.
- j) A Side Hinged Folding door provide easy 100% opening of doorway.

- k) Raft footing is the type of foundation generally provided in soils possessing low bearing capacity.
- l) Gypsum plaster may be used for any interior wall or ceiling surface that is subjected to severe moisture conditions.
- m) Purlin is the roof member which is placed horizontally to support common rafter of a sloping roof.
- n) A Queen Closer is a piece of brick cut with its one corner equivalent to half the length and half the width of brick.
- o) Retaining wall is a wall constructed to resist the pressure of an earth filling.
- p) Building finishes involve only coverings for the internal surfaces of walls, floors, and ceilings as well as building the staircases, cupboard fittings, and ducting work.
- q) X-ray rooms are plastered with Barium plaster.
- r) In applying finishing to walls, the render is applied inside while the plaster is done externally.
- s) Openings in walls are spanned by arches or lintels, or a combination of both.
- t) Gambrel roof is the type of roof generally recommended for building in high mountainous region.

[20]

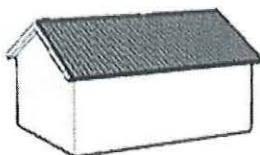
Question 3

- a) Highlight and give a brief explanation of the four (4) methods involved in construction which enable a building to resist the imposed loads by either Compression or Tension or combination of the two. (4)
- b) Explain in brief the term 'Slenderness Ratio' in structural strength and stability of a building. (2)
- c) Differentiate between the following as used in building construction: -
- i) The "*Traditional method*" and "*Conventional method*" of building construction. (3)
 - ii) An "*Employer*" and an "*Architect*" in a major construction work. (2)
 - iii) A "*Resident Engineer*" and a "*Clerk of works*". (3)
 - iv) A "*Superstructure*" and a "*Substructure*". (3)
 - v) "*Unburnt bricks*" and "*burnt bricks*". (3)

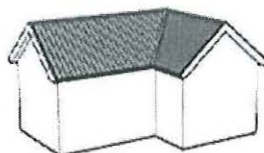
[20]**Question 4**

- a) Distinguish between the following terms as used in building construction: -
- i) "*Damp proof Course*" and "*Damp proof membrane*" (2)
 - ii) "*Cross*" and "*Party walls*" (2)
- b) Identify the following types of Pitch roofs. (3)

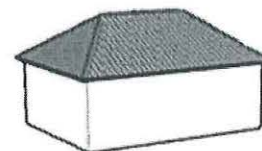
i)



ii)



iii)



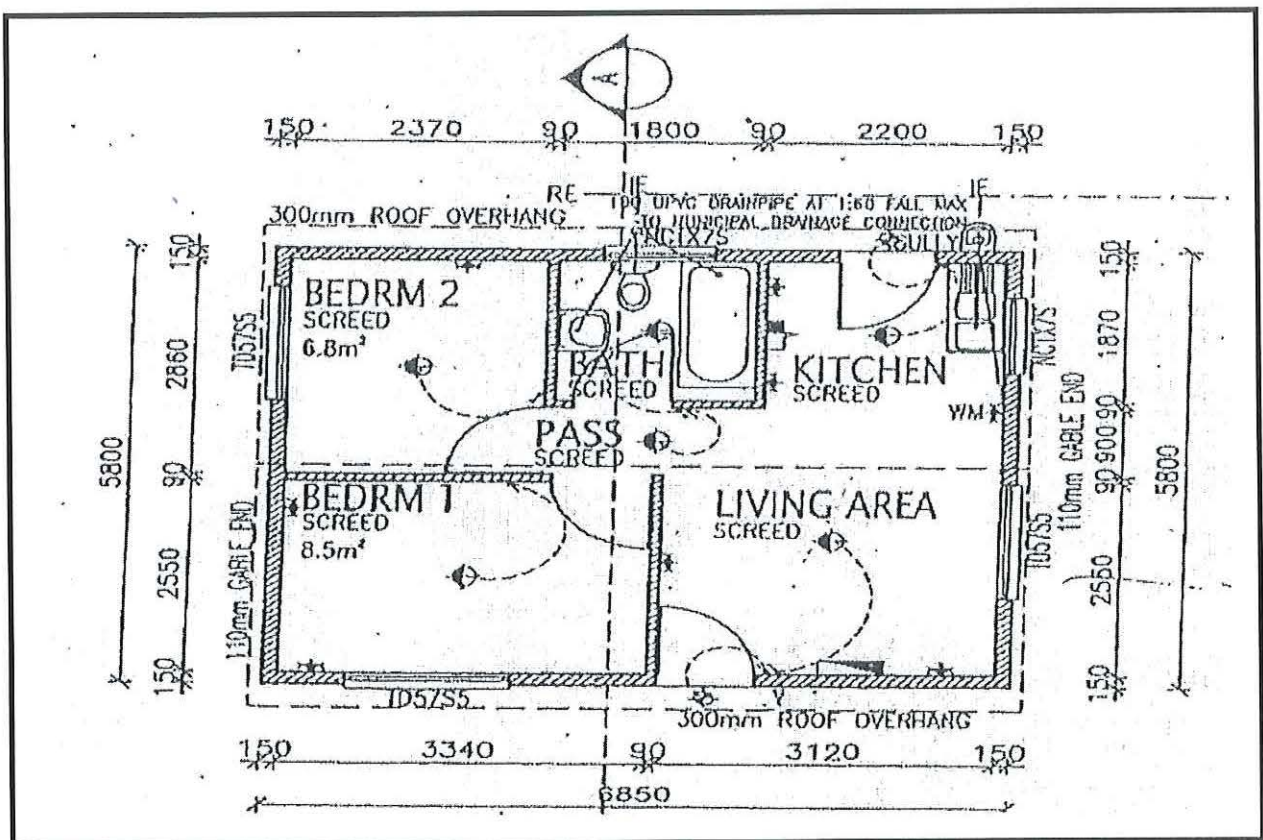
- c) Highlight any four (4) advantages of deep strip foundation over the traditional strip foundation. (2)

- d) Draw the following type of building components and label them appropriately: -
 - i) A brick wall and stone wall. (3)
 - ii) A deep strip foundation and a pad foundation. (3)
 - iii) A double pitched roof and see-saw roof. (3)

[18]

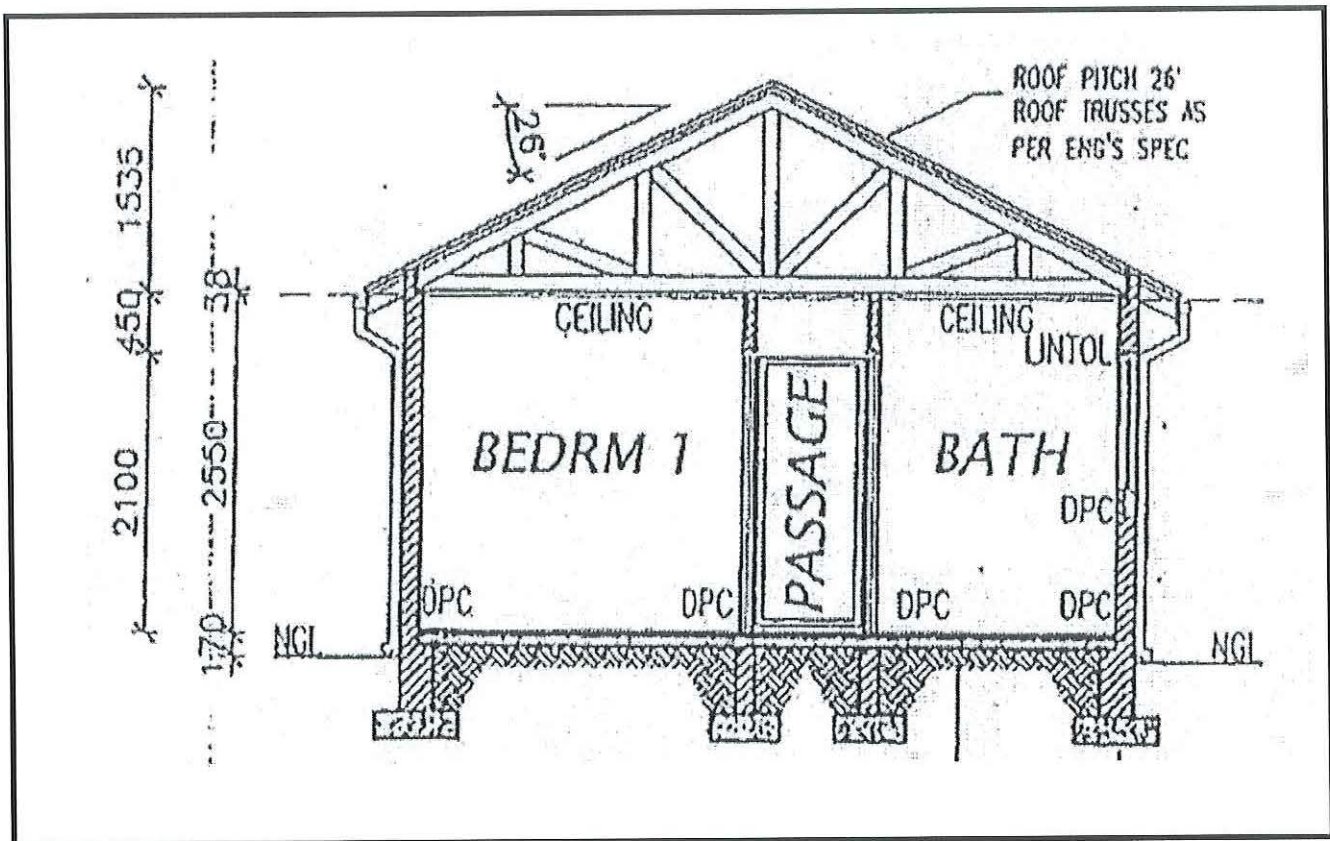
Question 5

- a) Use the architectural drawing of the house below to answer the following questions.



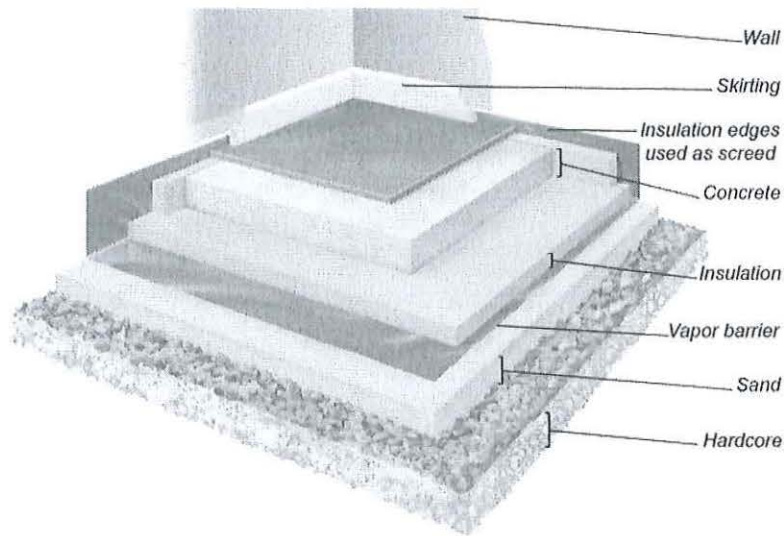
- i) Identify the type of building sketch (1)
- ii) Mention any form of the accommodation details (2)
- iii) Identify the thickness of the external and internal walls envelopes (2)
- iv) Calculate the Area of the building (in m²) (3)
- v) What does the section plane (vertical dashed line with a symbol A) in the plan represent? (2)

b) Use the building sketch below to answer the following questions:

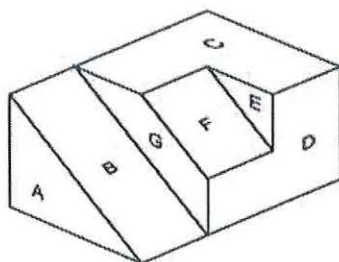


- i) Identify the type of building architectural sketch (1)
- ii) What is the height of the external walls (in metres) from the DPC to the brickplate? (2)
- iii) What is the angle of slope of the roof pitch (in degrees) as illustrated in the building sketch? (2)

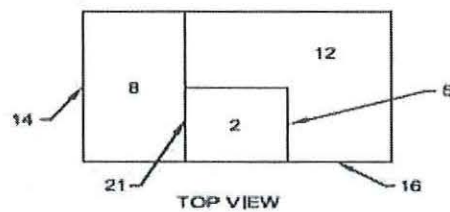
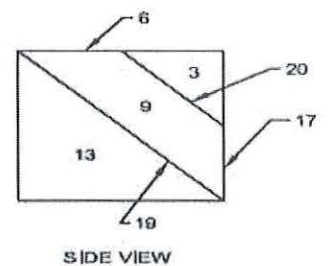
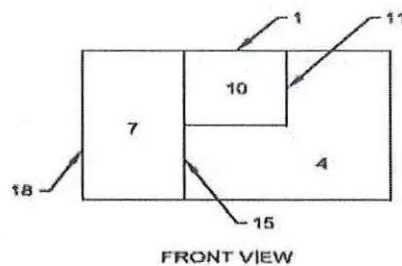
c) Identify the components of a typical floor construction in buildings as illustrated below. (4)



d) Use the isometric Object below and its corresponding multiview in orthographic (two dimension) drawings to complete the table attached as Appendix A. (9)



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



[28]

Student Number:.....

APPENDIX A

QUESTION 5 (d) ANSWER SHEET

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

[9]