



**NAMIBIA UNIVERSITY
OF SCIENCE AND TECHNOLOGY**

Faculty of Natural Resources and Spatial Sciences

Department of Land and Property Sciences

QUALIFICATION(S): Diploma in Property Studies Bachelor of Property Studies	QUALIFICATION(S) CODE: 06DPRS 08BPRS
COURSE NAME: Building Construction and Services	COURSE CODE: BCS520S
EXAMS SESSION/DATE: January 2019	NQF LEVEL: 5
DURATION: 3 Hours	MARKS: 100

SECOND OPPORTUNITY/SUPPLEMENTARY EXAMINATION QUESTION PAPER	
EXAMINER(S)	Mrs. E. Teodol
MODERATOR:	Mr. V. Kangotue

THIS QUESTION PAPER CONSISTS OF 8 PAGES
(Including this front page)

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 four (4) questions.
4. You must answer **ALL QUESTIONS**.
5. Make sure your Student Number is on the EXAMINATION BOOK(s).

PERMISSIBLE MATERIALS

6. Non Programmable Scientific Calculator and Ruler.

Question 1

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

- a) Gambrel roof is a type of roof which slopes in two directions with a break in the slope on each side.
- 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) In stairway the platform at the end of a series of steps, is known as Landing.
- 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) The service area in a building means the area occupied by stairs, toilets, lights and shafts.
- 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) The below-ground drainage system comprises all the drainage pipes that collect waste from the various sanitary appliances and convey them to the above ground drainage system.

- 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 loping 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 fitments, and ducting work.
- q) An 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 to accommodate doors and windows 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 2

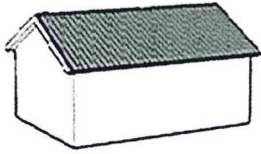
- a) Identify and give a brief explanation of the four (4) methods of in construction which enable a building to resist the imposed loads by either Compression or Tension or combination of the two. (4)
- b) Explain in brief the term 'Slenderness Ratio' in structural strength and stability of a building. (2)
- c) Differentiate between the following as used in building construction: -
- i) The traditional method of building and conventional method of 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]**
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Question 3

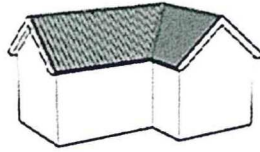
- a) Distinguish between the following terms as used in building construction: -
- i) Panel door and Flush door. (3)
 - ii) Facing and Engineering bricks (2)
 - iii) Damp proof Course and Damp proof membrane (2)
 - iv) Arches and Lintels (indicate how loads are transmitted) (2)
 - v) Cross and Party walls (2)

b) Identify the following types of Pitch roofs. (3)

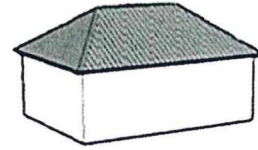
i)



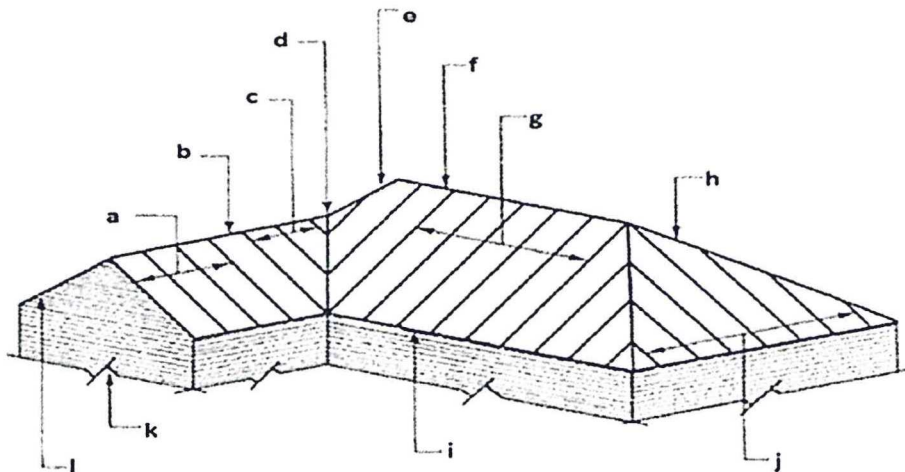
ii)



iii)



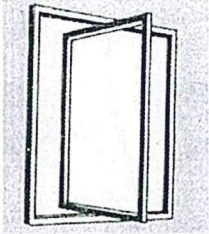
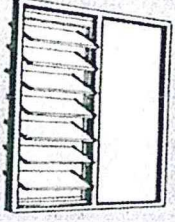
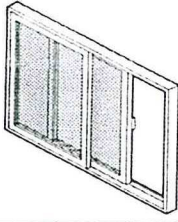
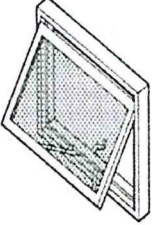
c) Label the twelve (12) individual components of the roof construction below. (6)



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

e) Identify each of the following basic types of Windows on the basis of the ways it is opened.

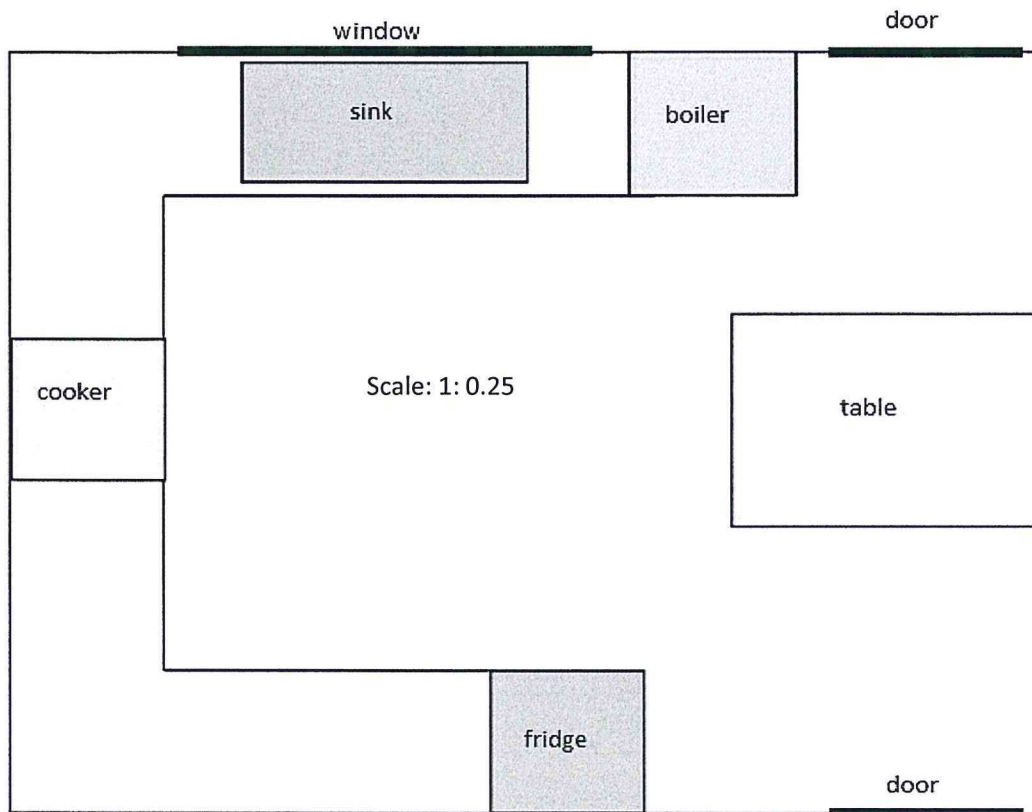
(4)

i)	ii)	ii)	iii)
			

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Question 4

a) The diagram below shows the plan of a kitchen.



- i) Complete the table by finding the dimensions of each object shown on the plan (in cm) (7)
- ii) Using a scale of 1: 0.25 find the actual dimensions of each object (in m) (7)
- iii) Calculate the area of each object (square metres) except the window and the doors (6)

Dimension	On plan (cm)	Actual (m)	Area (m ²)
Kitchen – length			
Kitchen – width			
Table – length			
Table – width			
Sink – length			
Sink – width			
Cooker – length			
Cooker – width			
Boiler – length			
Boiler – width			
Fridge – length			
Fridge – width			
Window – width			N/A
Doors – width			N/A

- b) Mention the five (5) factors affecting the choice of materials for a roof structure. (2.5)
- c) State the three (3) main steps of plastering process in building construction. (1.5)
- d) Draw the following type of building components and label them appropriately: -
- i) A brick wall and stone wall. (2)
 - ii) A deep strip foundation and a pad foundation. (2)
 - iii) A double pitched roof and see-saw roof. (2)
 - iv) A top hung and a pivot window. (2)
- e) Outline any four (4) most common paints for building available in the market. (2)

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All the best of luck.