



**PAMIBIA UNIVERSITY  
OF SCIENCE AND TECHNOLOGY**

**FACULTY OF ENGINEERING AND THE BUILT ENVIRONMENT**

**DEPARTMENT OF LAND AND SPATIAL SCIENCES  
(LAND AND PROPERTY SECTION)**

<b>QUALIFICATION(S):</b> DIPLOMA IN PROPERTY STUDIES BACHELOR OF PROPERTY STUDIES	
<b>QUALIFICATION(S) CODE:</b> 06DPRS 08BPRS	<b>NQF LEVEL:</b> 5
<b>COURSE CODE:</b> BCS520S	<b>COURSE NAME:</b> BUILDING CONSTRUCTION AND SERVICES
<b>EXAMS SESSION:</b> JANUARY 2023	<b>PAPER:</b> THEORY
<b>DURATION:</b> 3 HOURS	<b>MARKS:</b> 100

<b>SECOND OPPORTUNITY/SUPPLEMENTARY EXAMINATION QUESTION PAPER</b>	
<b>EXAMINER(S)</b>	ELINA TEODOL
<b>MODERATOR:</b>	VERINJAERAKO KANGOTUE

<b>INSTRUCTIONS</b>	
<ol style="list-style-type: none"><li>1. Read the entire question paper before answering the Questions.</li><li>2. Please write clearly and legibly!</li><li>3. The question paper contains a total of <b>4 questions</b>.</li><li>4. You must answer <b>ALL QUESTIONS</b>.</li><li>5. Make sure your Student Number is on the EXAMINATION BOOK(S).</li></ol>	

**PERMISSIBLE MATERIALS**

1. Non – Programmable Scientific Calculator

**THIS QUESTION PAPER CONSISTS OF 8 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. (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 is 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 drainpipes 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 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.

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**Question 2**

- 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]**
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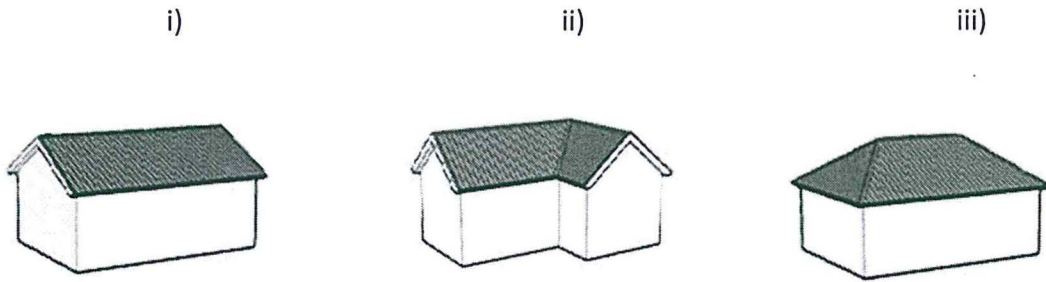
**Question 3**

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

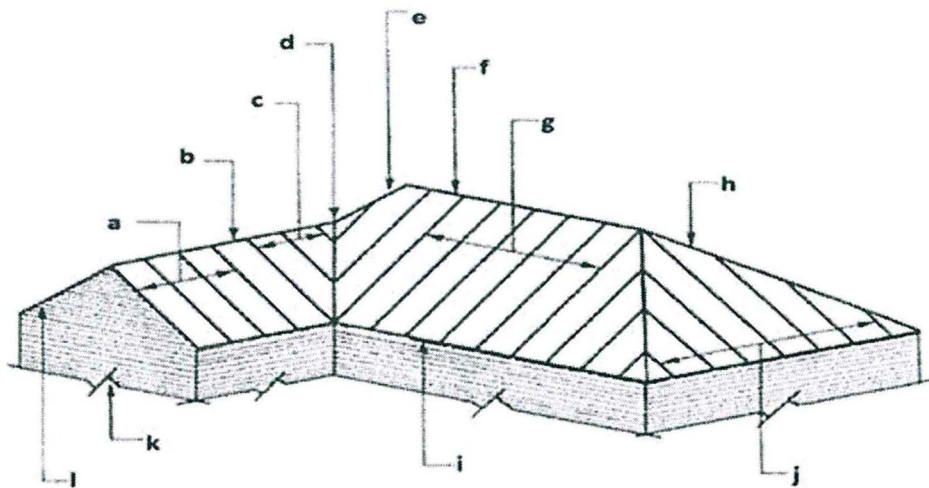




c) Identify the following types of Pitch roofs. (3)



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

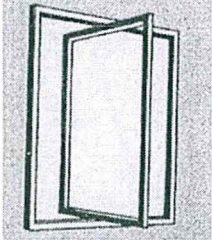
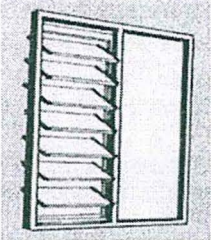
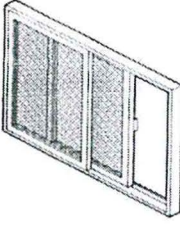
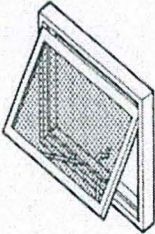


e) Highlight any four (4) advantages of deep strip foundation over the traditional strip foundation. (2)



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

(4)

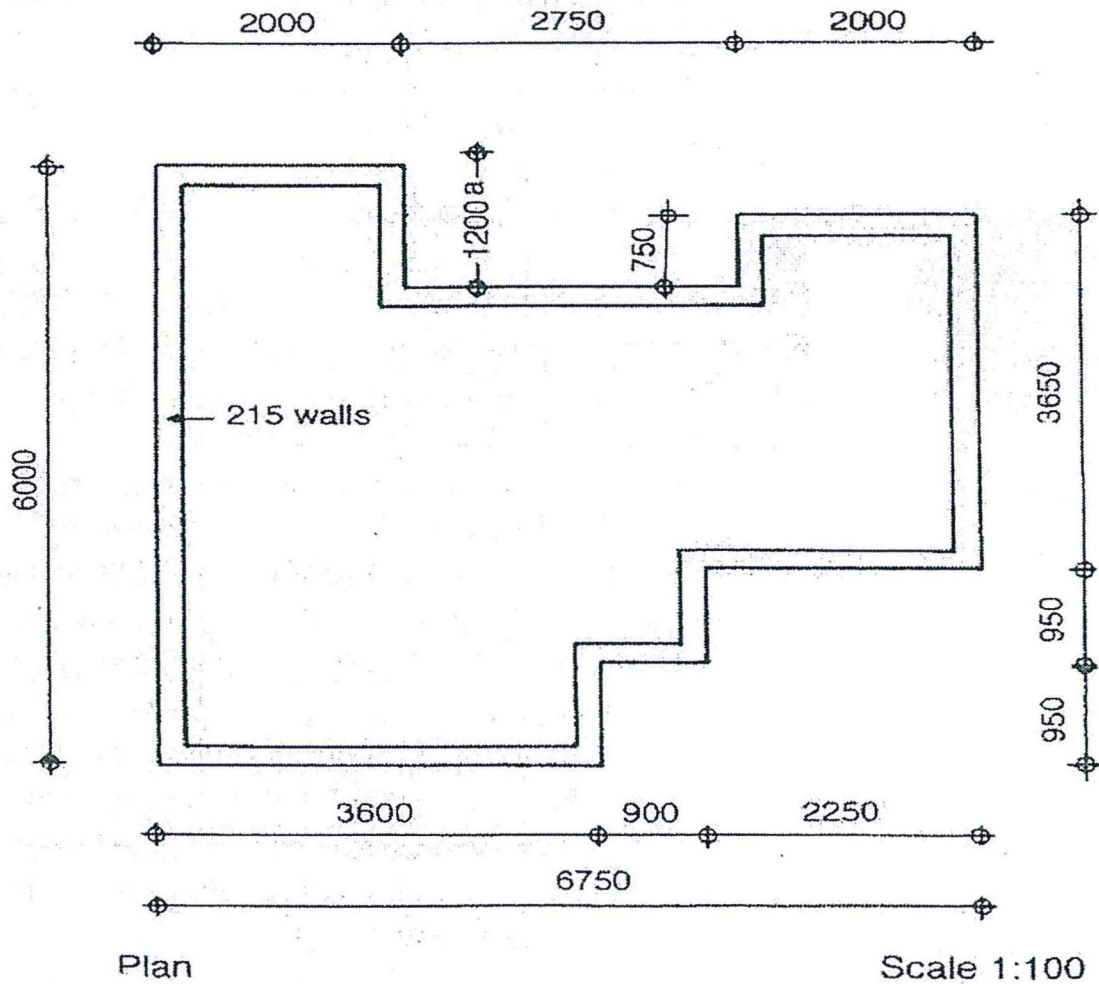
i)	ii)	ii)	iii)
			

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**Question 4**

- a) Below is the floor plan of Erf No. 5112 Hofsanger Street Khomasdal as provided by Kim and Alina during inspection on the 5 August 2019 for sale purposes (Market Value). Use the floor plan below to calculate the area of the building. (10)



- b) Mention the five (5) factors affecting the choice of materials for a roof structure. (5)
- c) State the three (3) main steps of plastering process in building construction. (3)




- 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)
  - iv) A top hung and a pivot window. (3)
- e) Outline any four (4) most common paints for building available in the market. (4)

**[34]**

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**All the best of luck.**

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