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UNIVERSITY OF NAMIBIA

FACULTY	Agriculture, Engineering and Natural Sciences		
DEPARTMENT	Geosciences		
SUBJECT	Igneous Petrology		
SUBJECT CODE	S3701GY		
PAPER	PAPER 1 – Theory		
DATE	May/June 2026		
DURATION	**180 min (3 hours)**	**MARKS**	90

FIRST OPPORTUNITY EXAMINATION

Examiner: Dr. M. Harris

Internal Moderator: Dr. M. Tshiningayamwe

External Moderator: Prof Miguel Gomez- Heras

This question paper consists of two pages (including this one)

Instructions
Closed book examination
Answer all seven (7) questions.
Recommendation: read first all subordinate questions before you answer.

UNIVERSITY OF NAMIBIA EXAMINATIONS

Question 1: **[10 Marks]**

Explain the following textures:

(a) Symplectites (2.5)

(b) Phaneritic (2.5)

(c) Myrmekite (2.5)

(d) Trachytic (2.5)

Question 2: **[15 Marks]**

Explain why the LIL/HFS ratio in arc magmas differ from the ratio in MORB?

Question 3: **[10 Marks]**

Discuss the formation of A-type and M-type granites.

Question 4: **[10 Marks]**

Discuss the model for the origin of carbonatites.

Question 5: **[10 Marks}**

Explain the processes that are involved in the modification of the magma composition.

Question 6: **[20 Marks}**

Discuss OIB in terms of chemical composition, sources of magma and tectonic setting.

OIB – Ocean Island Basalts

Question 7 **[15 marks]**

(a) Draw a column indicating the sequence of rocks in ophiolites. (8)

(b) Explain how an ophiolite sequence can be used to interpret ancient plate tectonic processes. (7)

END OF EXAMINATION