



<u>FACULTY</u>	: Education
<u>DEPARTMENT</u>	: Science and Technology Education
<u>CAMPUS</u>	: APK
<u>MODULE</u>	: METHODOLOGY AND PRACTICUM: PHYSICAL SCIENCES (MOFPPA3)
<u>SEMESTER</u>	: First
<u>EXAM</u>	: SSA July 2019

ASSESSOR(S) : Mr A SONDLLO

MODERATOR : DR RAMAILA (UJ)

DURATION : 1 HOUR

MARKS : 50

NUMBER OF PAGES: 3 PAGES

INSTRUCTIONS:

1. Answer ALL THE QUESTIONS.
 2. Number your answers clearly.
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QUESTION 1

There has been overwhelming support from the public and other stakeholders for the principles of the reformed school science curriculum. However, many science teachers experience barriers when implementing the changes.

- 1.1 Identify and discuss any two barriers that impede the implementation of the reformed school science curriculum. (4)
 - 1.2 What strategies can science teachers implement in addressing the two barriers you have identified in 1.1? (4)
 - 1.3 Identify and discuss three (3) factors that have driven science curriculum reform in South Africa (6)
- [14]

QUESTION 2

The Gauteng Education MEC Panyaza Lesufi has indicated that the department's Information and Communication Technology (ICT) objective is to provide high school children in public schools with tablets. This creates an imperative for the infusion of ICT in science teaching.

- 2.1 Identify and discuss three (3) advantages of using computer simulations in science teaching (6)
 - 2.2 Identify and discuss three (3) challenges this can pose for science teachers. (6)
- [12]

QUESTION 3

- 3.1 What is an analogy? (2)
- 3.2 Why an analogy is usually referred to as a 'double-edged sword'? Use an (4)

example to explain this.

3.3 Identify an abstract concept in chemistry (grade 10-12) [Target] and an appropriate analog. (4)

3.4 Prove the similarities between the target and analog using the concept from 3.3. (4)

[14]

QUESTION 4

Mrs Zulu wants to introduce states of matter to his class. This is a concept his class is not familiar with. Shulman (1986) speaks of pedagogical representations, such as demonstrations, illustrations, explanations and analogies, that enable abstract concepts to become understandable to learners. Discuss any two (2) pedagogical representations Mrs Zulu could use to make statements / phases of matter understandable to her learners.

(10)

[10]

TOTAL: 50