



<u>FACULTY</u>	: Education
<u>DEPARTMENT</u>	: Science and Technology Education
<u>CAMPUS</u>	: APK
<u>MODULE</u>	: SUBJECT METHODOLOGY PHYSICAL SCIENCE (MPFPSY1)
<u>SEMESTER</u>	: Second
<u>EXAM</u>	: November 2019

ASSESSOR(S) : DR S RAMAILA

MODERATOR : PROF SK SINGH (UL)

DURATION : 2 HOURS **MARKS** : 100

NUMBER OF PAGES: 3 PAGES

INSTRUCTIONS:

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

1.1 Provide an analysis of the Further Education and Training (FET) Phase for the Curriculum and Assessment Policy Statement (Physical Sciences) in terms of the following structural aspects:

- (a) The depth of the subject in terms of the extent to which learners could move from a superficial grasp of a topic to a more refined and powerful grasp.
- (b) The progression of topics from Grades 10 to 12 in terms of increase in level of complexity and difficulty.
- (c) The coherence of the curriculum in terms of connections and coordination between topics through the levels.
- (d) The degree to which teachers are given explicit guidance regarding pedagogy.
- (e) The degree to which teachers are provided with guidance regarding assessment.

Use specific examples from the policy document (CAPS) to support the arguments you are making. **(25)**

1.2 Discuss the emerging challenges associated with implementation of the Curriculum and Assessment Policy Statement in South African schools. **(10)**

1.3 How do Curriculum and Assessment Policy Statement specific aims translate into meaningful learning experiences planned for Physical Sciences learners? Your answer should highlight some of the principles and aims listed in the policy document. **(10)**

[45]

QUESTION 2

2.1 Discuss the competencies of an accomplished Physical Sciences teacher. **(10)**

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- 2.2 Explain how the inquiry-based approach can be used as a tool to promote constructivist learning in science teaching. **(5)**
- 2.3 Discuss the nature of Transformed Specific Pedagogical Content Knowledge according to the Mavhunga (2012) model. **(10)**
- 2.4 Discuss the significance of Technological Pedagogical Content Knowledge (TPACK) in science teaching. **(10)**
- 2.5 Critically discuss the limitations of Shulman's (1987) original theorisation of the pedagogical content knowledge construct. **(5)**
- 2.6 Explain the significance of integrating the nature of science to the curriculum as an essential tenet in science education. **(5)**
- 2.7 How does subject matter knowledge affect successful teaching of the nature of science? **(5)**
- 2.8 Why is it important to adopt the explicit approach to teach the nature of science? **(5)**
- [55]**
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TOTAL: 100