



UNIVERSITY  
OF  
JOHANNESBURG

<b><u>FACULTY</u></b>	: Education
<b><u>DEPARTMENT</u></b>	: Science and Technology Education
<b><u>CAMPUS</u></b>	: APK
<b><u>MODULE</u></b>	: SUBJECT METHODOLOGY PHYSICAL SCIENCE (MPFPSY1)
<b><u>SEMESTER</u></b>	: Second
<b><u>EXAM</u></b>	: SSAO January 2020

**ASSESSOR(S)** : DR S RAMAILA

**MODERATOR** : PROF SK SINGH (UL)

**DURATION** : 2 HOURS

**MARKS** : 100

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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 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]**

**QUESTION 2**

- 2.1 Discuss the competencies of an accomplished Physical Sciences teacher. **(10)**
- 2.2 Discuss the role of inquiry-based learning in science teaching. **(15)**
- 2.3 Differentiate between pedagogical content knowledge and technological pedagogical content knowledge. **(5)**
- 2.4 Discuss the significance of Technological Pedagogical Content Knowledge (TPACK) in science teaching. **(10)**

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- 2.5 Discuss the nature of Transformed Specific Pedagogical Content Knowledge according to the Mavhunga (2012) model. **(10)**
- 2.6 Briefly explain the basic tenets of the nature of science. **(15)**
- 2.7 Discuss the significance of research on pedagogical content knowledge science education? **(10)**
- [75]**
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**TOTAL: 100**