

UNIVERSITY
OF
JOHANNESBURG

<u>FACULTY</u>	: EDUCATION
<u>DEPARTMENT</u>	: SCIENCE AND TECHNOLOGY EDUCATION
<u>CAMPUS</u>	: APK
<u>MODULE</u>	: MOFPPA3 METHODOLOGY AND PRACTICUM: PHYSICAL SCIENCE 3A
<u>SEMESTER</u>	: First
<u>EXAM</u>	: July 2018

ASSESSOR(S) : MR A SONDLLO

MODERATOR : DR L MAVURU

DURATION : 1 HOUR

MARKS : 50

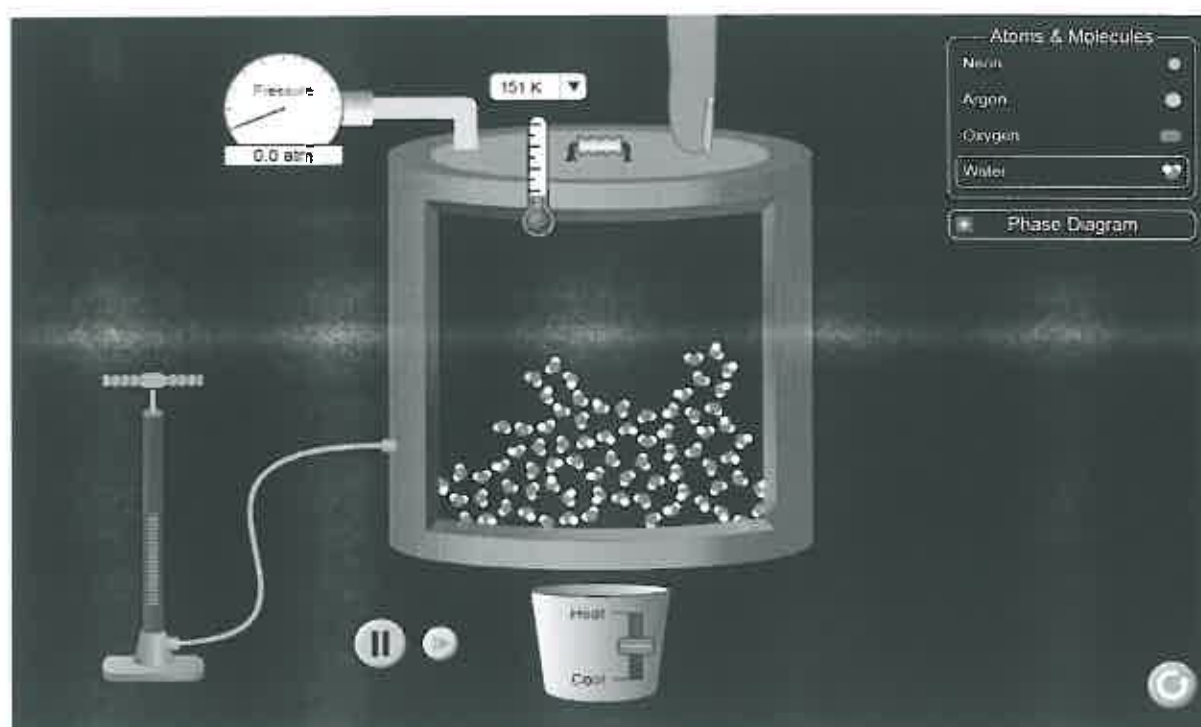
NUMBER OF PAGES: 3 PAGES

INSTRUCTIONS:

1. Answer ALL the questions.
2. Number your answers clearly.

QUESTION 1

- 1.1 Discuss Shulman (1986) conceptualisation of Pedagogical Content Knowledge (PCK) (2)
- 1.2 Explain what is meant by an analogy. (3)
- 1.3 Use an example to explain why an analogy is sometimes considered a “double-edged sword”. (5)
- [10]

QUESTION 2**States of matter**

- 2.1 What is the expected cognitive learning outcome of the simulation in the above figure? (2)
- 2.2 Describe how a teacher may use this simulation in class. Consider the role of the science teacher and the role of the learners. (5)
- 2.3 Formulate any two (2) questions for a worksheet that could guide the learners in forming the science concept represented in this interactive simulation. (4)

QUESTION 3

- 3.1 Define inquiry based learning. (2)
- 3.2 Describe any three (3) essential features of inquiry-based learning according to the National Science Education Standards of the United States. (6)
- 3.3 Discuss the role of inquiry-based learning in supporting science concept formation. Use examples from your own subject area in this discussion. (9)

[17]**QUESTION 4**

- 4.1 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.

4.1.1 Discuss three (3) advantages of using computer simulations in science teaching (6)

4.1.2 Discuss three (3) challenges this can pose for science teachers. (6)

[12]

TOTAL: 50