



<b><u>FACULTY</u></b>	: Education
<b><u>DEPARTMENT</u></b>	: Childhood Education
<b><u>CAMPUS</u></b>	: SWC
<b><u>MODULE</u></b>	: INTRODUCTION TO SCIENCE AND TECHNOLOGY FOR THE INTERMEDIATE PHASE 1A. (SATINA1)
<b><u>SEMESTER</u></b>	: First
<b><u>EXAM</u></b>	: June 2020

<b><u>ASSESSOR(S)</u></b>	: MRS M PENN		
<b><u>MODERATOR</u></b>	: DR L MAVURU (UJ)		
<b><u>DURATION</u></b>	: Take-home exam	<b><u>MARKS</u></b>	: 100

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NUMBER OF PAGES: 3 PAGES

INSTRUCTIONS:

1. Answer ALL THE QUESTIONS.
  2. Number your answers clearly.
  3. This paper will be released on blackboard in the assessment folder 72 hours before the due date.
  4. Your work should be typed in Times New Romans/Arial font, 1.5 spacing and must include a cover page with your details.
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**QUESTION 1: The Nature of Science**

The Nature of Science (NoS) typically refers to the epistemology of science, science as a way of knowing, or the values and beliefs inherent to scientific knowledge and its development (Lederman, 1992).

- 1.1 Discuss any three (3) tenets of the NoS. (6)
  - 1.2 Describe any two (2) limitations of science. (4)
  - 1.3 Critically analyse how the understanding of the Nature of Science (NoS) can result in scientific literacy. (8)
  - 1.4 Select a topic in the natural sciences and discuss how you will use the selected topic to teach your learners the three (3) tenets of the Nature of Science you identified in 1.1 above. (12)
- [30]

**QUESTION 2: Origin and diversity of the universe**

According to the International Astronomical Union (IAU), a planet is a celestial body that meets certain defined characteristics.

- 2.1 What are the three (3) main criteria that classify celestial bodies as planets? (3)
- 2.2 Why is Pluto is no longer considered as one of the main planets of the solar system? (2)
- 2.3 Discuss the composition of the eight planets that make up the solar system. (8)
- 2.4 A galaxy is a huge collection of gas, dust, and billions of stars and all their solar systems. Explain the occurrence of different types of galaxies in our universe. (7)

- 2.5 The earth is the only astronomical object known to harbour life. Critically analyse the significance of the earth's rotation around its own axis and its revolution around the sun. (10)
- [30]

**Question 3: Diversity and classification of living things**

There are several theories that have been provided by scientists to explain the origin of life on earth.

- 3.1 With the exception of the evolution theory, describe three (3) theories, which explain the origin of life on earth. (12)
- 3.2 State the kingdoms into which living things are classified. (5)
- 3.3 Since the 1940s, fungi have been used for the production of antibiotics, and, more recently, various enzymes produced by fungi are used industrially. Fungi are also used as biological pesticides to control weeds, plant diseases and insect pests; However, Fungi may be very harmful to the world. Critically discuss the negative impacts that fungi have in the world. (13)
- [30]

**Question 4: Evolution**

Evolution is the process of change over time. It is believed that, modern organisms descended from ancient organisms through the process of evolution.

- 4.1 Discuss the components that support the process of natural selection as proposed by Charles Darwin. (10)
- [10]