



UNIVERSITY OF JOHANNESBURG
FACULTY OF EDUCATION
JUNE SUPPLEMENTARY EXAMINATION 2016

PROGRAMME: B. Ed. Intermediate Phase

MODULE: Natural Science and Technology for the Intermediate Phase

CODE: SATINA3

TIME: 2 hours

MARKS: 100

EXAMINER: Mr F Naude

MODERATOR: Dr L White

(This paper consists of 3 pages)

INSTRUCTIONS

Read the following instructions carefully before answering the questions.

1. Answer all questions.
2. Read the instructions carefully and answer appropriately.
3. Use the mark allocation of each question as an indication of how much information to provide.

QUESTION 1

Unit 1: Introduction to Earth and Space science

- 1.1 Explain what a 'lightyear' is a measure of and give the exact value and unit of measurement. (4)
- 1.2 Describe the influence that the mass of an object as well as the distance between these objects have on the force of gravity. (4)

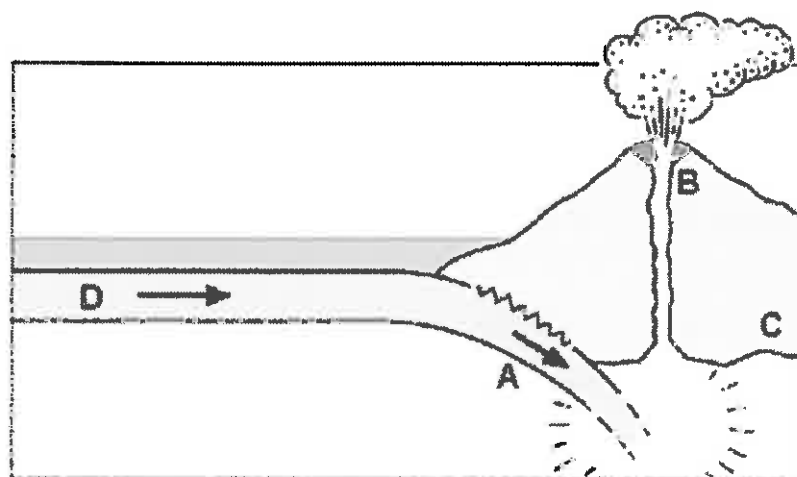
[8]

QUESTION 2**Unit 2: Space Science**

- 2.1 Draw a representation of our solar system? (5)
- 2.2 The sun is the central star of our universe. Explain how the sun produces heat and light energy. (4)
- 2.3 Explain why Uranus would not be a good planet to colonise. (4)
- 2.5 Explain how 'space tourism' will influence the future tourism market. Use an example of such an activity to substantiate your answer. (5)
- 2.6 What is the role of the international space station? (2)

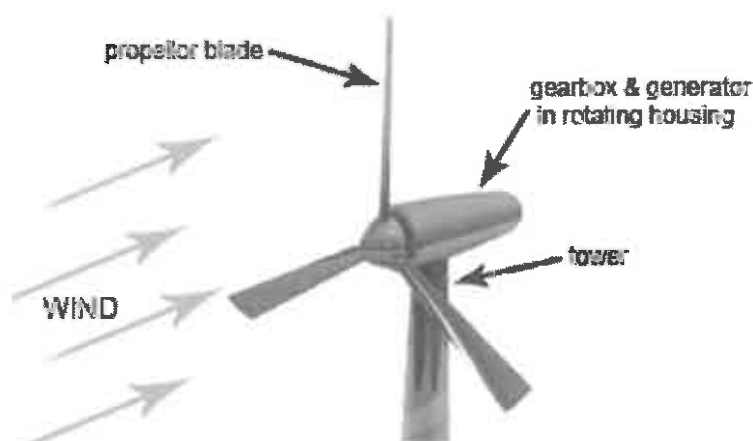
[20]**QUESTION 3****Unit 3: Earth Science**

- 3.1 Make a labeled drawing depicting how the moon influences the tides of the ocean. (6)
- 3.2 List the layers of the Earth's inner structure. (4)
- 3.3 Study the below diagram and answer the questions that follow:



- 3.3.1 Describe the phenomenon represented by label D. (2)
- 3.3.2 Explain what the relationship is between the phenomenon labeled A and the phenomenon labeled B. (6)

3.4 The below picture shows the various parts of a wind turbine.



- 3.4.1 Describe what wind is and explain what causes wind to blow. (4)
- 3.4.2 Energy produced using wind power is described as green energy. Justify the use of green energy by comparing it to other types of energy. (8)
- 3.4.3 Choose another form of green energy and explain why it would be beneficial to use this particular form of energy. (6)
- 3.5 Many communities have myths regarding lightning that are not based on scientific fact. Choose any one of these myths and explain why this myth is incorrect. (6)

[42]

Question 4

Write an essay wherein you advocate for nations to take action to limit the current and future anthropogenic impact on the environment. Use global warming as an example of anthropogenic environmental destruction and argue for all nations to take global action to limit the current and future impact on the environment. **[30]**

TOTAL: 100

