

**BACHELOR OF EDUCATION: YEAR 3**  
**SUPPLEMENTARY EXAMINATION 2019**



**Subject: NATURAL SCIENCES METHOD 2**

**Time: 3 Hours**

**Marks: 100**

**Internal Examiner:** Dr Y. Nsubuga

**Moderator:** Mr C. Thomas

**Instructions:**

This paper consists of **4** Questions

Answer **all** questions.

Read each question carefully before writing down your answer.

**QUESTION 1: INTEGRATION OF ICT INTO SCIENCE EDUCATION (24 MARKS)**

One of the aims of the EDN 322 module is to equip you with the necessary competences for effective integration of ICT into your Grade 7-9 Natural Sciences lessons.

1.1 Briefly describe FIVE ways in which ICT integration improves the quality of Science education. (10)

1.2 Research shows that although an increasing number of schools in the Eastern Cape now have fully resourced computer laboratories, they remain largely under-utilised. Describe FOUR factors that are contributing to the under-utilisation of ICT at these schools. (8)

1.3 Write down the THREE questions that Science teachers need to ask themselves before deciding whether or not to integrate ICT into their lessons. (6)

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**QUESTION 2: STATIC ELECTRICITY (26 MARKS)**

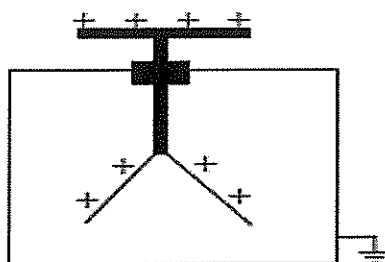
2.1 Lightning is one of the occurrences that are caused by static electricity.

2.1.1 Explain what happens during lightning. (8)

2.1.2 Name TWO other everyday occurrences that are caused by static electricity. (2)

2.1.3 Describe TWO practical activities you would carry out to demonstrate static electricity to Grade 8 learners. (6)

2.2 As part of your lesson on static electricity, you made an electroscope positively charged as shown in the diagram below.



2.2.1 Describe what you did to make the electroscope positively charged. (3)

2.2.2 What will be observed if a positively charged object is brought near the disc of the electroscope shown in the diagram above? (2)

2.2.3 Explain the observations made in (2.2.2) (3)

2.3 State TWO industrial applications of static electricity. (2)

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**QUESTION 3: CURRENT ELECTRICITY (25 MARKS)**

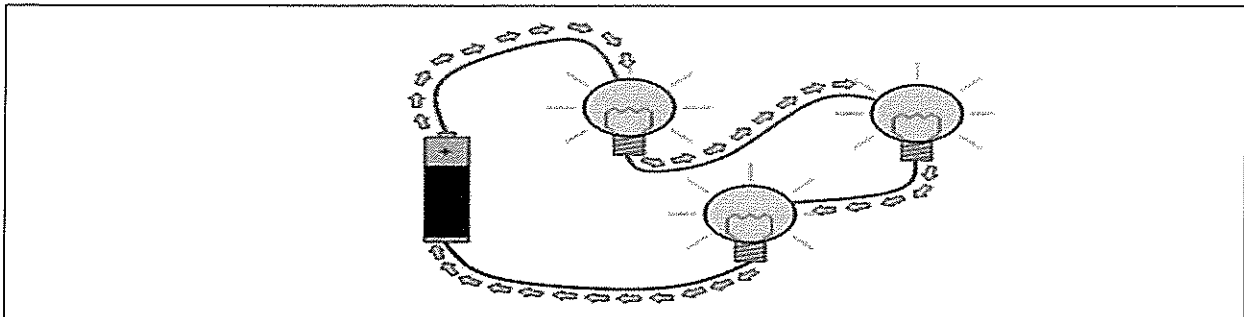
3.1 You are in the process of preparing a Grade 8 Natural Sciences lesson on ‘Types of electric circuits.’

3.1.1 Write down THREE lesson objectives that you would include in your lesson plan. (6)

3.1.2 Suggest TWO teaching methods you would use during this lesson. Explain why these methods are suitable for teaching this topic. (6)

3.1.3 Suggest TWO challenges you are likely to face during this lesson. Explain how you would address these challenges. (6)

3.2 Study the diagram below and answer the questions that follow.



3.2.1 What type of electric circuit is illustrated in the diagram above? (1)

3.2.2 Write down THREE properties of the type of electric circuit demonstrated in the diagram above. (6)

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**QUESTION 4: EARTH AND BEYOND (25 MARKS)**

One of the aims of teaching Astronomy to Grade 7-9 learners is to enable them to identify the different objects that are found in outer space, such as stars, planets and asteroids.

4.1 Write THREE key points you would like your learners to know about:

4.1.1 Stars.

4.1.2 Planets.

4.1.3 Asteroids. (9)

4.2 List THREE *other* examples of objects that are found in outer space. (3)

4.3 Describe an experiment you would conduct to illustrate to your learners the cause of day and night on Planet Earth. (5)

4.4 Differentiate between:

4.4.1 Earth rotation and Earth revolution.

4.4.2 Umbra and penumbra. (8)

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