



**NAMIBIA UNIVERSITY  
OF SCIENCE AND TECHNOLOGY**

**FACULTY OF NATURAL RESOURCES AND SPATIAL SCIENCES**

**DEPARTMENT OF AGRICULTURE AND NATURAL RESOURCES SCIENCES**

<b>QUALIFICATION: BACHELOR OF NATURAL RESOURCE MANAGEMENT</b>	
<b>QUALIFICATION CODE: 07BNTC</b>	<b>LEVEL: 4</b>
<b>COURSE CODE: NCT420S</b>	<b>COURSE NAME: TECHNIQUES 1</b>
<b>SESSION: JANUARY 2020</b>	<b>PAPER: THEORY</b>
<b>DURATION: 3 HOURS</b>	<b>MARKS: 150</b>

<b>SUPPLEMENTARY / SECOND OPPORTUNITY EXAMINATION QUESTION PAPER</b>	
<b>EXAMINER(S)</b>	Mr. H. Tjikurunda
<b>MODERATOR:</b>	Mr. W. Adank

<b>INSTRUCTIONS</b>
<ol style="list-style-type: none"><li>1. Answer ALL the questions.</li><li>2. Write clearly and neatly.</li><li>3. Number the answers clearly.</li></ol>

**PERMISSIBLE MATERIALS**

1. All written work MUST be done in blue or black ink
2. No books, notes and other additional aids are allowed

**THIS QUESTION PAPER CONSISTS OF 3 PAGES (Including this front page)**

## **SECTION A: SAFETY IN THE WORKPLACE**

1. Define the term safety and discuss what it entails in term of the workplace. [5]
2. Provide the correct words/phrases referring to major workplace hazards. [4]
3. Name and explain 5 (five) safety tips to prevent workplace accidents. [5]
4. The procedure for fighting fires in the workshop will vary according to the circumstances surrounding the fire, but some general rules apply. State the seven (7) general rules for fighting fires in the workshop. [7]
5. Briefly, explain how you will treat fractures sustained at workplace as a result of a falling accident. [4]

**SECTION A: 25**

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## **SECTION B: VEHICLE CARE AND MAINTENANCE**

1. Name 8 (eight) major systems that make up a modern vehicle and explain the purpose/function of each. (8x2) [16]
2. Cleaning your vehicle ensures that it is maintained and cared for to work properly. Discuss 5 (five) ways to ensure that your vehicle is clean, both internally and externally. [5]

**SECTION B: 21**

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## **SECTION C: ALTERNATIVE ENERGY**

1. Discuss the working principle of a solar water heater. [7]
2. Discuss the advantages and disadvantages of hydropower. [10]
3. Hydroelectric power plants come in three basic types. Name and explain how each type of hydropower plant works. [14]

**SECTION C: 31**

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**SECTION D: BASIC ARC WELDING**

- 1. Provide a definition for arc welding. [3]
- 2. Briefly, explain what is meant by maximum current for arc welding. [3]
- 3. Copy the Table below in your answer book and complete column (B) with the recommended electrode size for mild steel with the provide sizes (A). [5]

Work piece (A)	Recommended electrode size (B)
2.0 mm or less	
2.0 mm – 3.5 mm	
3.5 mm – 5.0 mm	
5.0 mm – 8.0 mm	
8.0 mm or more	

- 4. Correct travel speed is important in arc welding. Discuss what happens to your weld if; [5]
  - a) Travel speed is excessive (2)
  - b) Travel speed is too slow (3)
- 5. Explain the process of striking the arc in metal arc welding. [6]
- 6. Briefly, discuss 7 (seven) basic principles to follow in order to ensure a good weld. [7]
- 7. Name and explain the 2 (two) terms relating to the preparation of butt welds. [4]

**SECTION D: 33**

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**SECTION E: FENCES**

- 1. Briefly discuss the advantages of electric fencing for a protected area such as a game park. [12]

**SECTION E: 12**

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**SECTION F: CONCRETE TECHNOLOGY**

1. State the required properties for aggregate to be used in the preparation of concrete. [6]
2. Well-made concrete is strong and durable. Discuss the factor that affects the strength and durability of concrete. [6]
3. Briefly discuss the 7 seven steps to be followed before placing concrete. [11]

**SECTION F: 23**

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**SECTION G: WATER INSTALLATIONS**

1. Pipelines are essential to convey water from a borehole to places where it is needed. Discuss ANY 5 practical points to be considered when installing pipelines in a game park. [5]

**SECTION G: 5**

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**PAPER TOTAL: 150**