



**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 RESOURCES MANAGEMENT (NATURE CONSERVATION)</b>	
<b>QUALIFICATION CODE: 07BNTC</b>	<b>LEVEL: 7</b>
<b>COURSE CODE: NCT420S</b>	<b>COURSE NAME: NATURE CONSERVATION TECHNIQUES 1</b>
<b>DATE: January 2019</b>	
<b>DURATION: 3 HOURS</b>	<b>MARKS: 150</b>

<b>SECOND OPORTUNITY/SUPPLEMENTARY EXAMINATION QUESTION PAPER</b>	
<b>EXAMINER</b>	Mr. C. Els
<b>MODERATOR:</b>	Mr. W. F. 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>	

**THIS QUESTION PAPER CONSISTS OF 7 PAGES (Excluding this front page)**

**SECTION A: CONCRETE****Question 1**

Define the term curing. (5)

**Question 2**

Name six (6) curing methods to use when working with concrete. (6)

**Question 3**

How do you go about to attach fresh concrete to existing concrete, which is two days old? (5)

**Sub Total [16]**

**SECTION B: MOTOR VEHICLE****Question 1**

What are the two (2) discs called placed between the gearbox and the flywheel that play an important part of the power flow in a motor vehicle? (2)

**Question 2**

Name four (4) characteristics of liquids under pressure. (4)

**Question 3**

What are the functions of the following items? (5)

- (a) Rocker arm
- (b) Valve spring
- (c) Rotor
- (d) Fan
- (e) Thermostat

**Question 4**

Describe how a mechanical fuel pump works. (2)

**Question 5**

Name two (2) functions of the flywheel. (2)

**Question 6**

What is the section of the engine called that fits on top of the engine block? (1)

**Question 7**

Where precisely on a motor vehicle, will you find the following items? (5)

- (a) Flywheel
- (b) Tappet cover
- (c) Differential
- (d) Disc pads
- (e) Central electrode

**Question 8**

Name three (3) characteristics of brake fluid. (3)

**Sub Total [24]**

**SECTION C: FENCING****Question 1**

Where are the following binding wires applied in fencing? (4)

- (a) 2,5 mm
- (b) 0,2 mm
- (c) 0,4 mm
- (d) 1,6 mm

**Question 2**

Name three (3) ways of treating untreated timber against termites. (3)

**Question 3**

Name five (5) reasons for putting up fences on a farm. (5)

**Question 4**

What is the minimum thickness (diameter) allowed for the following materials? (4)

- (a) Straining post
- (b) Line post
- (c) Anchor post
- (d) Wooden dropper

**Question 5**

What is the maximum distance two box anchors might be apart? (1)

**Question 6**

What is the purpose of a surveyor's beacon? (1)

**Question 7**

Name three (3) types of metal droppers that are available in the trade. (3)

**Question 8**

What is the minimum length a brace must be? (1)

**Sub Total [22]**

**SECTION D: WELDING****Question 1**

Name six (6) causes of slag inclusions during welding. (6)

**Question 2**

If you must join two pieces of wrought iron, head-to-head.

- (a) What type of welding is needed? (1)
- (b) Explain why it is preferable. (1)

**Question 3**

When joining two plates, using a lap joint.

- (a) What type of welding is required? (1)
- (b) How will you determine the minimum length the two plates must overlap? (1)

**Question 4**

If you must weld on a painted area, for example, at a lap or t-joint, and it is impossible to clean the area by scraping or burning to prevent the paint to run from inside the joint, explain the method you will use, to clean the area before welding. (3)

**Question 5**

Specify the thickness requirements within which the following butt welds can be done. (4)

- (a) Square butt weld
- (b) Single u-butt weld
- (c) Single vee butt weld
- (d) Double vee butt weld

**Sub Total [17]**

**SECTION E: PUMPS FOR ARTIFICIAL WATER POINTS****Question 1**

Name eight (8) causes why the water supply out of a borehole might be very weak or non-existing, although the pump is operating. (8)

**Question 2**

Name three (3) possible reasons why the speed of an engine drops from time to time and smoke appears from the exhaust. (3)

**Question 3**

Name three (3) reasons for a powerhead to get jammed. (3)

**Question 4**

Name possible causes for the following:

- (a) Water leaking from the top of force head cover. (2)
- (b) Water leaking between force head cover and housing. (2)

**Question 5**

Name two (2) reasons why the drive wheel of the powerhead is turning, but the power head is not working. (2)

**Question 6**

Name two (2) items that must be greased regularly on a windmill. (2)

**Question 7**

Name the function of the bonnet of a windmill. (1)

**Question 8**

How often must a diesel engine be serviced? (1)

**Sub Total [24]**

**SECTION F: ALTERNATIVE ENERGY****Question 1**

Describe the following terms: (5)

- (a) Radiation
- (b) Electric current
- (c) Photovoltaic cell
- (d) Peak watt
- (e) Volt

**Question 2**

Name seven (7) aspects to consider when comparing different warm water solar units, before deciding which one to buy. (7)

**Question 3**

- (a) What is the ideal color to paint the solar panel of your warm water solar unit? (1)
- (b) Explain the reason for the above. (1)

**Question 4**

What is the recommended height the base of the storage tank should be above the top of the collector to avoid reverse circulation at night, when the water in the absorber panel cools down? (1)

**Sub Total [15]**

**SECTION G: SAFETY****Question 1**

Name seven (7) safety precautions to take when working with a press drill. (7)

**Question 2**

Name the color codes of the conductors to be connected to the following pins on a wall plug (two colors or combinations per pin). (6)

- (a) Earth
- (b) Live
- (c) Neutral

**Question 3**

Name six (6) safety precautions to take when working with a gas blow torch. (6)

**Question 4**

Describe how to make a Britannia joint. (5)

**Question 5**

Explain how to go about when charging a vehicle battery, including the safety precautions to be taken. (6)

**Sub Total [30]**

**TOTAL [150]**