



higher education & training

Department:
Higher Education and Training
REPUBLIC OF SOUTH AFRICA

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NATIONAL CERTIFICATE

WATER AND WASTE-WATER TREATMENT PRACTICE N1

(8120011)

**6 April 2018 (X-Paper)
09:00–12:00**

This question paper consists of 5 pages.

DEPARTMENT OF HIGHER EDUCATION AND TRAINING
REPUBLIC OF SOUTH AFRICA
NATIONAL CERTIFICATE
WATER AND WASTE-WATER TREATMENT PRACTICE N1
TIME: 3 HOURS
MARKS: 100

INSTRUCTIONS AND INFORMATION

1. Answer ALL the questions.
 2. Read ALL the questions carefully.
 3. Number the answers according to the numbering system used in this question paper.
 4. Write neatly and legibly.
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QUESTION 1

- 1.1 Give FIVE reasons why water from rivers and dams need to be treated. (5)
- 1.2 State FOUR physical requirements of water suitable for domestic use. (4)
- 1.3 Choose an item from COLUMN B that matches a word in COLUMN A. Write only the letter (A–G) next to the question number (1.3.1–1.3.6) in the ANSWER BOOK.

COLUMN A		COLUMN B	
1.3.1	Transpiration	A	dams, rivers, springs
1.3.2	Evaporation	B	adsorbed by the soil
1.3.3	Condensation	C	rain and snow
1.3.4	Precipitation	D	from clouds
1.3.5	Infiltration	E	from water sources
1.3.6	Emergence	F	fog and hail frost
		G	from plant

(6 × 1) (6)

- 1.4 Give THREE reasons why we say water is a unique substance. (3)
- 1.5 Name FOUR factors that influence evaporation. (4)
- [22]**

QUESTION 2

- 2.1 Which FIVE factors ensure constant water supply? (5)
- 2.2 Name FIVE essential uses of water in everyday life. (5)
- 2.3 Explain what is meant by *sources and distribution* of water. (4)
- 2.4 Write brief notes on the domestic usage of water. (4)
- 2.5 State the negative chain reaction that occurs regarding conservation and the ecology when a forest is removed. (4)
- [22]**

QUESTION 3

3.1 Indicate whether the following statements are TRUE or FALSE. Write only 'true' or 'false' next to the question number (3.1.1–3.1.5) in the ANSWER BOOK.

3.1.1 Gravity is mass per unit volume.

3.1.2 Density is when an object is pulled to the centre.

3.1.3 Eutrophication is an anaerobic digester which is caused by sludge.

3.1.4 An effluent is when a liquid, water is flowing out of a system.

3.1.5 An element is the smallest part of a substance that cannot be broken down into a smaller substance.

(5 × 1) (5)

3.2 Define the following terms:

3.2.1 Hard water

3.2.2 Matter

3.2.3 pH

3.2.4 Mass

3.2.5 Metric ton

(5 × 2) (10)

3.3 State the FIVE stages in the treatment of portable water in a plant.

(5)
[20]

QUESTION 4

4.1 Make a neat, labelled sketch of a rapid gravity sand filter.

(14)

4.2 Name the FOUR zones into which a self-purification process is divided.

(4)

4.3 State FOUR causes of pollution through agricultural activities.

(4)
[22]

QUESTION 5

- 5.1 Name FOUR major components of any sewage treatment. (4)
- 5.2 Why is it so important to use a flowmeter and flow measurements for water flowing through a pipe? (4)
- 5.3 Which important aspect should be noted or done when doing motor maintenance? (4)
- 5.4 Name TWO types of safety equipment that should always be kept in the supervisor's vehicle. (2)

[14]**TOTAL: 100**