higher education & training

Department:
Higher Education and Training
REPUBLIC OF SOUTH AFRICA

T1750(**E**)(A1)T

NATIONAL CERTIFICATE

WATER AND WASTE-WATER TREATMENT PRACTICE N1

(8120011)

1 August 2018 (X-Paper)
09:00–12:00

This question paper consists of 4 pages.

Copyright reserved

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.

Copyright reserved

QUESTION 1

1.1 State the TWO areas into which the treatment of water can be divided. (2)

1.2 Explain the reasons for the treatment of waste water. (5)

1.3 List FIVE factors to be considered when treating waste water as outlined in Regulation No. 991 of 18 May 1984. (5)

1.4 Draw the flow diagram of a conventional primary sewage treatment plant. (10)
[22]

QUESTION 2

2.1 Name the FIVE sources of surface water and state the percentage of each. (10)

2.2 Briefly explain the term *swamp*. (6)

2.3 Explain why pumps are the most common method used to extract ground and surface water. (3)

2.4 State the FOUR basic types of pumps. (4)
[23]

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– 3.1.4) in the ANSWER BOOK.

3.1.1 Anaerobic is free oxygen available in the system obtained from the air or dissolved water.

3.1.2 A buffer solution is used to maintain a constant in spite of acid and base addition.

3.1.3 Brackish water contains large amounts of dissolved salts which affect the taste of water.

3.1.4 A compound is a substance made of the combination of two or more elements.

(4 × 1) (4)

3.2 Define the following terms:

3.2.1 Sterilisation

3.2.2 Suspension

3.2.3 Toxin

Copyright reserved

3.2.4 Soft water

3.2.5 Turbidity

(5 × 2) (10)

3.3 Why is it necessary to treat water before it is used? (5)

[19]

QUESTION 4

4.1 Illustrate a conventional biological filtration process using a flow diagram. (12)

4.2 List FOUR diseases which are caused by pathogenic bacteria. (4)

[16]

QUESTION 5

5.1 State FIVE types of flow meters used to measure the flow of water. (5)

5.2 Explain why we need to keep records. (4)

5.3 Give any FIVE general safety rules that need to be followed in the workplace. (5)

5.4 Briefly outline a plan of action to be followed in order to effectively do maintenance on a waste water system. (4)

5.5 Name TWO regular maintenance tasks. (2)

[20]

TOTAL: 100

Copyright reserved