higher education & training

Department:
Higher Education and Training
REPUBLIC OF SOUTH AFRICA

NATIONAL CERTIFICATE

WATER AND WASTE-WATER TREATMENT PRACTICE N1

(8120011)

20 April 2021 (X-paper)
09:00–12:00

This question paper consists of 4 pages.

270Q1A2120

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DEPARTMENT OF HIGHER EDUCATION AND TRAINING
REPUBLIC OF SOUTH AFRICA

NATIONAL CERTIFICATE
WATER AND WASTE-WATER TREATMENT PRACTICE N1
TIME: 3 HOURS
MARKS: 150

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. Only use a black or blue pen.
5. Write neatly and legibly.

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QUESTION 1

1.1 State THREE reasons why the water in rivers and dams must be treated before use. (3)

1.2 Verification of drinking water quality is very important and needs to be checked and monitored.

1.2.1 What is the main purpose of checking water quality? (2)

1.2.2 Explain the key constituents for compliance of the municipality by monitoring water quality. (6)

1.3 Give FIVE phases of the water cycle depending on energy from the sun and the force of gravity, and indicate where these occur. (10)
[21]

QUESTION 2

2.1 Indicate whether the following statements are TRUE or FALSE by writing only 'True' or 'False' next to the question number (2.1.1–2.1.5) in the ANSWER BOOK.

2.1.1 Evaporation from plants is called precipitation.

2.1.2 Fishing is primarily recreational.

2.1.3 The unit for measuring turbidity is NTU.

2.1.4 Water treatment is classified into three main phases.

2.1.5 The first phase in the clarification process is flocculation, also known as coagulation.

(5 × 1) (5)

2.2 Explain the factors that influence the existence of a spring. (4)

2.3 Name THREE national regulations and guidelines that water affairs workers need to be aware of to provide a basic level of service. (3)

2.4 Explain the purpose of coagulation. (5)

2.5 Name the FOUR zones in which the self-purification process can be divided. (4)
[21]

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QUESTION 3

3.1 Explain why is it important to maintain good record keeping in a water and waste-water treatment plant. (5)

3.2 3.2.1 What is the difference between domestic and industrial waste water? (4)

3.2.2 Name FOUR sources of domestic waste water. (4)

3.2.3 Name THREE sources of industrial waste water. (3)

3.3 Name FIVE major treatments in a sewage treatment plant. (5)
[21]

QUESTION 4

4.1 Explain the terms:

4.1.1 Desludging (4)

4.1.2 Scum removal (4)

4.2 What does HCL stand for? (1)

4.3 What are the SIX purposes of maturation ponds in tertiary treatment of waste water? (6)
[15]

QUESTION 5

5.1 Name different types of clothing to be worn when handling chemicals. (6)

5.2 State FOUR factors that contribute to the aesthetic value of water. (4)

5.3 What types of records should be listed when dealing with the terms stated below?

5.3.1 Maintenance records (3)

5.3.2 When planning/plans (3)

5.4 Briefly describe the operation of a trickling filter. (6)
[22]

TOTAL: 100

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