



**NAMIBIA UNIVERSITY
OF SCIENCE AND TECHNOLOGY**

FACULTY OF HEALTH AND APPLIED SCIENCES

DEPARTMENT OF HEALTH SCIENCES

QUALIFICATION: BACHELOR OF ENVIRONMENTAL HEALTH SCIENCES	
QUALIFICATION CODE: 08 BEHS	LEVEL: 5
COURSE: WATER AND SANITATION	COURSE CODE: WAS512S
DATE: JANUARY 2019	SESSION: SEMESTER 2, 2018
DURATION: 3 HOURS	MARKS: 100

SECOND OPPORTUNITY /SUPPLEMENTARY EXAMINATION QUESTION PAPER	
EXAMINER	MS BUHLEBENKOSI MPOFU
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INSTRUCTIONS
<ol style="list-style-type: none">1. Answer ALL the questions.2. Write clearly and neatly.3. Number the answers clearly.

PERMISSIBLE MATERIALS
NONE

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

SECTION A [20 MARKS]

QUESTION 1

[10]

Match the concepts in Column A with the correct definition in Column B. Write on your answer sheet the concept number and the letter representing the correct definition.

Column A		Column B	
1.1	Colloids	A	A hole dug in the ground serving as soak away.
1.2	Sanitary	B	Underground chambers used to provide access to sewers for inspection and cleaning.
1.3	Sludge	C	Parasitic worms that grow and multiply in sewage and wet soil.
1.4	Soak Pit	D	Collection of water samples and measurement for chemical and biological characteristics to determine its quality.
1.5	Manhole	E	Solids that have been separated from liquid waste by sedimentation.
1.6	Unprotected Source	F	These are low diameter particles which are responsible for the turbidity or the color of surface water.
1.7	Helminths	G	Relating to the conditions that affect hygiene and health, especially the supply of sewage facilities and clean drinking water.
1.8	Improved Water Source	H	Sources of water that are constructed to avoid contamination.
1.9	Water Sampling	I	Bacteria that are found in the soil, in water that has been influenced by surface water, and in human or animal waste.
1.10	Total Coliforms	J	Where there have been no attempts to protect any of the source, as cattle and human alike drink from the same place.

QUESTION 2 [10]

Differentiate the following terms:

- 2.1. Onsite Sanitation and Basic Sanitation. [4]
- 2.2. Ecosan Toilet and Conventional Toilet. [4]
- 2.3. Water-based disease and Water related disease. [2]

SECTION B [35 MARKS]

QUESTION 3 [35]

- 3.1. State and briefly elaborate any **five (5)** acceptable water quality aspects. [5]
- 3.2. Why is sewage a public health concern? [5]
- 3.3. Outline any **five (5)** ways one can treat water at home. [10]
- 3.4. What are the characteristics of a protected water source? [10]
- 3.5. Explain the importance of Environmental Sanitation. [5]

SECTION C [45 MARKS]

[45]

QUESTION 4

4.1 Outline how you would sample water from the following water points:

- a) Water reservoir. [5]
- b) Tap. [5]
- c) Well. [5]

4.2 Elaborate briefly what factors you would consider for a new water source

for a city.

[15]

4.3 Discuss any **five (5)** sanitation challenges facing the country of Namibia.

In your view how can these be solved.

[15]

TOTAL MARKS = 100