NAMIBIA UNIVERSITY OF SCIENCE AND TECHNOLOGY

FACULTY OF HEALTH, APPLIED SCIENCES and NATURAL RESOURCES

DEPARTMENT OF HEALTH SCIENCES

QUALIFICATION : BACHELOR OF ENVIRONMENTAL HEALTH SCIENCES	
QUALIFICATION CODE: 08 BOHS	**LEVEL**: 5
COURSE NAME: WATER AND SANITATION	**COURSE CODE**: WAS512S
DATE: JANUARY 2023	**SESSION:** 2nd Opportunity
DURATION: 3 HOURS	**MARKS: 100**

SUPPLEMENTARY/SECOND OPPORTUNITY EXAMINATION QUESTION PAPER	
EXAMINER	**MRS MOUYELELE HAUFIKU**
MODERATOR:	**MS CHARMAINE JANSEN**

INSTRUCTIONS
1. Read all the questions carefully before answering 2. Marks for each question are indicated at the end of each question 3. Number the answers clearly. 4. Please ensure that your writing is legible, neat and presentable

PERMISSIBLE MATERIAL: NONE

THIS QUESTION PAPER CONSISTS OF 4 PAGES
(Including this front page)

SECTION A [20 MARKS]

QUESTION 1 [10]

1.0 Define the following terms/concepts in the context of Water and Sanitation.

1.1 Aquifer [1]

1.2 Turbidity [1]

1.3 Filtration [1]

1.4 Ozonation [1]

1.5 Sewerage [1]

1.6 Sewer [1]

1.7 Biological Oxygen Demand (BOD) [1]

1.8 Anaerobic pond [1]

1.9 Sanitation [1]

1.10 Black water [1]

QUESTION 2 [10]

2.0 Match the concepts in Column A to their most correct statement in Column B. Write on your answer sheet the concept number and the letter representing the correct statement.
1 mark each

No	COLUMN A	COLUMN B	
2.1	Impermeable	A	A hole dug in the ground serving as soak away
2.2	Colloids	B	Not allowing passage of a liquid.
2.3	Permeable	C	Water that is pleasant to drink because its taste is good but it may not be safe to drink.
2.4	Soak pit	D	Parasitic worm that grow and multiply in sewage and wet soil
2.5	Helminths	E	Able to be passed through or penetrated by a fluid.
2.6	Palatable water	F	Water is heated to steam, which is then cooled and collected as liquid, leaving behind micro organisms
2.7	Dysentery	G	It is also called clarification
2.8	Sedimentation	H	Diarrhoea with blood and mucus present.
2.9	Distillation	I	Water that is safe for drinking, free from pathogens
2.10	Potable	J	These are low diameter particles which are responsible for the turbidity or the colour of surface water

SECTION B [40 MARKS]

QUESTION 3 [10]

3.0 Differentiate between the following terms

3.1 Shallow well and deep well [2]

3.2 Temporary and permanent hardness of water [2]

3.3 Communicable and non-communicable disease [2]

3.4 Water borne and water washed diseases, give also examples of each [4]

QUESTION 4 [10]

4.1 Mention any **five (5)** advantages of ground water [5]

4.2 State any **five (5)** advantages of rain water [5]

QUESTION 5 [20]

5.1 Outline the reasons/instance for when to do water testing [5]

5.2 In water treatment, sedimentation, or the removal by gravitational settling of suspended particles heavier than water, is perhaps the most widely useful operation. Elaborate on the factors that influence effective sedimentation processes: [7]

5.3 Give any **five (5)** advantages of a Ventilated Improved Pit latrine [5]

5.4 Briefly explain why sewage is a public health concern [3]

SECTION C [40 MARKS]

QUESTION 6 [20]

6.0 There is an outbreak of schistosomiasis at your village. As an upcoming Environmental Health Practitioner (EHP), you are asked to give health education on schistosomiasis Elaborating on its definition, causes, how it is transmitted and prevention methods. [20]

QUESTION 7 [20]

7.0 The sustainable development goal (SDG) 6, as formulated by the United Nations Open Working Group is to "Ensure availability and sustainable management of water and sanitation for all. Summarize the four principles that are proposed to help achieve this goal. [20]

TOTAL MARKS = 100