higher education & training

Department:
Higher Education and Training
REPUBLIC OF SOUTH AFRICA

MARKING GUIDELINE

NATIONAL CERTIFICATE

WATER AND WASTE-WATER TREATMENT PRACTICE N1

11 August 2021

This marking guideline consists of 5 pages.

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QUESTION 1

1.1 1.1.1 Occurs when water vapour in the atmosphere condenses into clouds and falls to earth.✓ Can take place in the form of rain, snow, ice pellets and hail.✓

1.1.2 Water from precipitation is stored on earth in liquid and solid forms.✓ Slightly more than 97% of salt water is stored in the oceans.✓

1.1.3 Evaporation is a process by which water in the sea and on land changes to water vapour, entering the atmosphere as a gas.✓

1.1.4 Transpiration it occurs in the plant as results of evaporation.✓ When evaporation increases with temperature, sunlight intensity, wind-speed, plant cover and ground moisture and decreases as the humidity of the air increases.✓

1.1.5 As water vapour rises it starts to cool, condensing into water droplets to form clouds.✓ Rain/precipitation falls from the clouds thereby returning the water to the earth. Almost all water on earth has passed through this hydrological cycle several times.✓

(5 × 2) (10)

1.2
1.2.1 False
1.2.2 True
1.2.3 True
1.2.4 False
1.2.5 False
1.2.6 False
1.2.7 True
1.2.8 False
1.2.9 False
1.2.10 True

(10 × 1) (10)
[20]

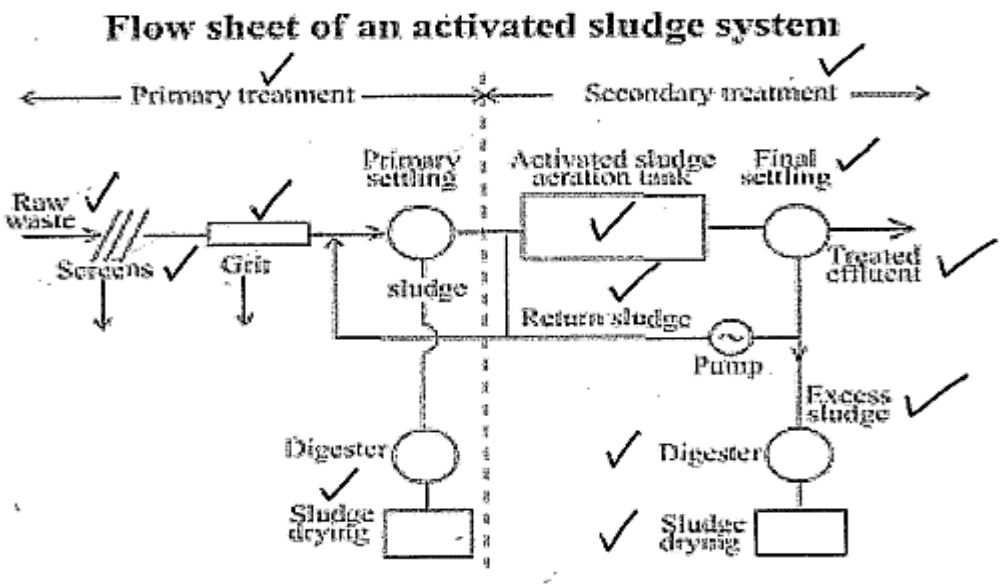
QUESTION 2

2.1
- Bath and shower
- Laundry
- Toilet
- Garden
- Drinking and cooking (5)

2.2
2.2.1 False
2.2.2 False
2.2.3 False
2.2.4 True
2.2.5 True

(5 × 1) (5)

2.3



(Any 10 × 1) (10)
[20]

QUESTION 3

3.1
- Keep the supply safe.
- Check supplies from springs ,wells or boreholes.
- Check/Collect supplies from streams, rivers ,lakes or ponds.
- Divert/Check supplies from farmland where animals graze or manure is spread. (4)

3.2 3.2.1 A pipeline is used for the transportation of goods through a pipe.

3.2.2 A penstock is a sluice or gate or intake structure that controls water flow **OR** an enclosed pipe that delivers water to hydraulic turbines and sewage systems.

3.2.3 A valve is a device that regulates, direct or control the flow of fluid (gases, liquids and solids) by opening and closing passageways.

3.2.4 A weir is a barrier across a river designed to alter the flow of the river.

3.2.5 A pumping station is a facility consisting of pumps and equipment for pumping fluids from one place to another.

(5 × 2) (10)

3.3
- Industrial pollution
- Agricultural pollution
- Wastewater pollution
- Pollution arising from nuclear power generation
- Water pollution caused by air pollution (5)

[19]

QUESTION 4

4.1
- The rights of access to basic water supply and sanitation services
- The setting of national standards and norms for basic water services
- Standards to be set for water services tariffs
- A regulatory framework for those responsible for water services provision
- Establishing and disestablishing water boards and water services committees
- Deciding the powers and duties of water boards and water services committees
- The monitoring of water supply and sanitation services
- Intervention by the minister or by the relevant province
- Financial assistance to WSis
- Information gathering through a national information system(NIS) and dissemination of that information
- Accountability of Water Services Providers (WSPs)
- The promotion of effective water resource management and conservation

(Any 10 × 1) (10)

4.2
- Primary treatment
- Secondary treatment
- Tertiary treatment (3)

4.3
- Trespassing on water supply system
- Interference with water supply system
- Damage to water supply system
- Obstruction of access to water supply system
- Pollution of council's water supply (5)

4.4
- Neutral water
- Soft water
- Hard water
- Brackish water (4)

[22]

QUESTION 5

5.1
- To record the amount of water usage a water meter is used
- Comparing water usage with the designed flow of the waste water system
- It help to detect leaking fixtures
- Accurate meter reading records will enable you to make good decisions about water conservation (4)

5.2
- To maintain a safe ,cost effective and ecological sound water and wastewater service to public
- To provides accurate and up-to-date information about operations taking place within the system and quality of the water
- Ensures that accurate information is reported to regulatory authorities
- Records track and alert staff to recurring problems areas
- Records regarding water quality tests ,system deficiencies and problems and the solutions thereof must kept permanently
- Inconsistent and inaccurate record keeping increases risk factors within the plant (6)

5.3
- Safety eye and face goggles
- Safety hard hat
- Protective boots
- Chemical resistant gloves
- Chemical safety suit (5)

5.4
- Pit latrines
- Twin pit latrines
- Chemical toilets
- Humus or compositing toilets (4)

[19]

TOTAL: 100

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