

Q Define term water pollution. what indicators are used to measure the quality of water? write down drinking water quality standards.

water pollution:

"water pollution is defined as any physical, chemical and biological change in composition of water which have detrimental consequences for living beings."

Indicators ^{used} to measure Quality of water:

Following indicators are used to measure quality of water.

- Dissolved oxygen
- PH
- Amount of nutrients
- Toxic substances
- Turbidity and bacteria

explain each of these briefly; in 2-3 lines each.

Drinking water Quality Standards:

(WHO) world Health Organization has gave drinking water quality standards in 1993. Pakistan environment protection

Agency also finalised national
standards for quality drinking
water in ~~jun~~ 2008.

Parameters

Pakistan

WHO

Standards

Standards

Bacterial :

E-coli or

Must not be

Must not be

Thermo-tolerant

detected in

detected in

coliform bacteria

any 100 ml

any 100 ml

sample

sample

Physical :

Color

≤ 15 True color

≤ 15 True color

units

units

Odour

Non-objectionable

Non-objectionable

Taste

Non objectionable

Non-objectionable

Turbidity

≤ 5 NTU (units)

≤ 5 NTU (units)

TDS

≤ 600

≤ 600

pH

6.5-8.5

6.5-8.5

Chemicals

Essential organic

Sulphate

400 mg/L

500 mg/L

Calcium

200 mg/L

No Guidelines

Sodium

200 mg/L

200 mg/L

Nitrate

50 mg/L

50 mg/L

Magnesium

100 mg/L

No Guidelines

(b) what is polio? Discuss its symptoms, cause of spreading, prevention and vaccine.

Polio myelitis:

"It is an acute viral infection. Primarily affect alimentary canal but sometimes spread to central nervous system resulting in paralysis and sometimes cause death."

Syptoms:

Polio myelitis has varying degree of symptoms depending on the severity of infection.

1- Asymptomatic infection:

- occurs in 90-95% cases
- only involve draining lymph nodes

2- Abortive Polio myelitis:

- occurs in 4-8% of cases
- Flu like symptoms
- Fever seldom exceeds 103°F
- Patient recovers quickly
- Recognized by rise in antibody titer.

3- Non-Paralytic poliomyelitis

17. cases

- Fever, malaise, sore throat,
- headache, vomiting
- Neck and spinal rigidity
- Recovery is rapid

4- Paralytic poliomyelitis:

20-51. cases

- weakness of one or more muscle group
- Asymmetrical flaccid paralysis
- Fever at the time of onset
- Tendon reflexes are diminished or absent

⇒ Causes of Spreading:

polio virus present in human feces and oropharyngeal secretions.

Mode of Transmission:

→ Faeco-oral Route

- Directly by contaminated fingers
- Indirectly by food, water, fomites, flies, milk etc.

Portal of Entry:

Enters in body through ingestion. Multiply in stomach, small intestine sometimes affect central nervous system. Shed in feces causes further contamination.

⇒ Prevention:

There is symptomatic treatment for polio virus. It can be prevented by "vaccination". Vaccination enhance the immune response of body against infection.

⇒ Vaccination:

There are two types of polio vaccine

- Injectable Polio vaccine
- Oral polio vaccine

4.5) Children are vaccinated at different age to prevent disease.

→ At birth

→ At the age of 6, 10, 14 weeks

→ A booster dose at the age

of 2 yrs. good answers!!