AKANSHA INSTITUTE OF NURSING

ANM I ST YEAR

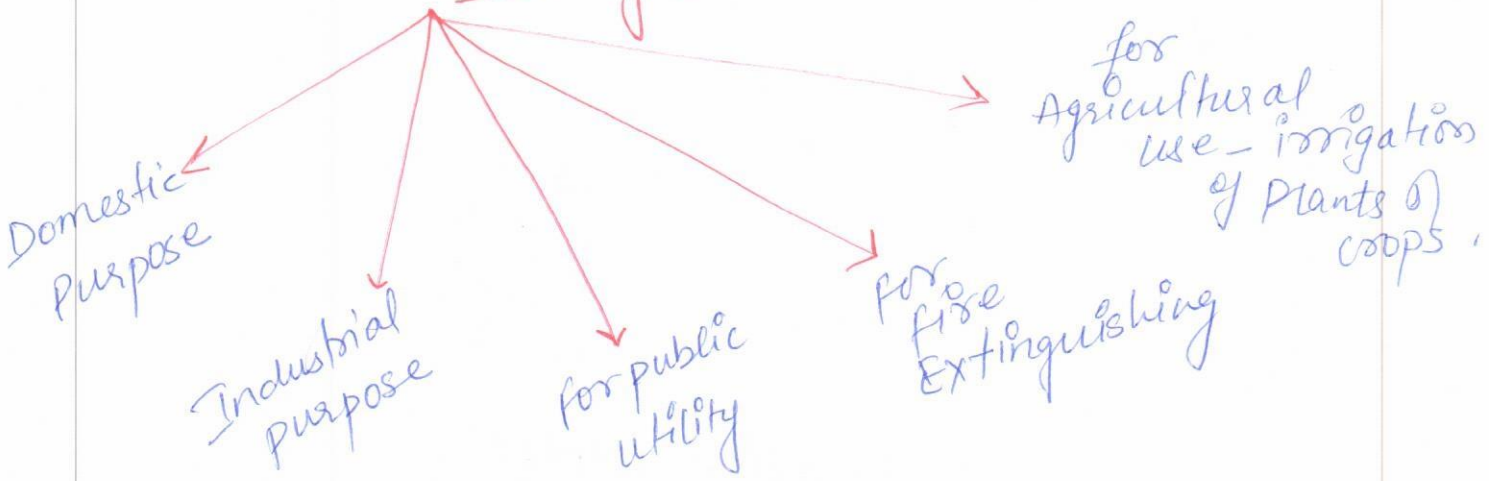
HEALTH PROMOTION

CHAPTER-2

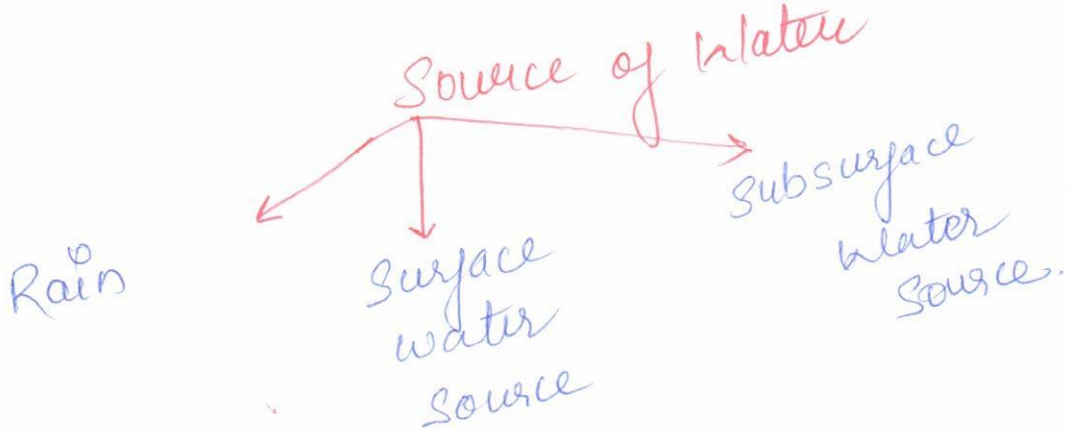
Safe Water

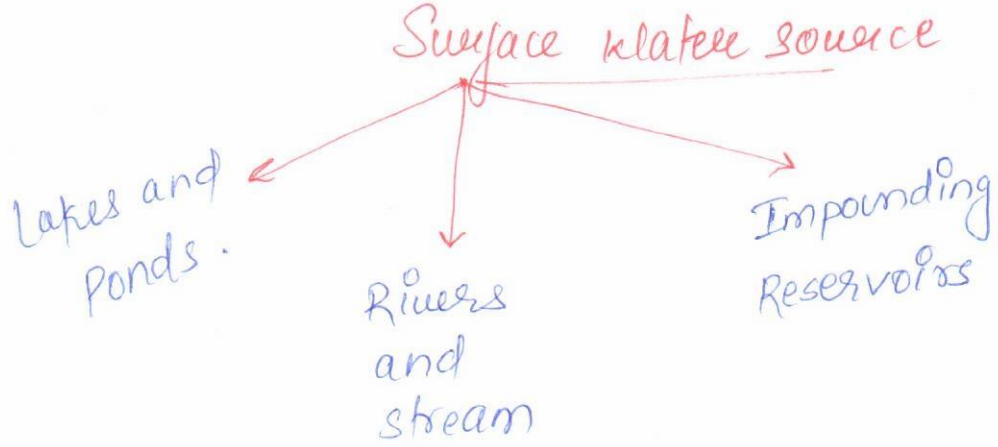
Human body consist of 65-70% of water. Man cannot survive without water. Water is used for the following purpose by humans.

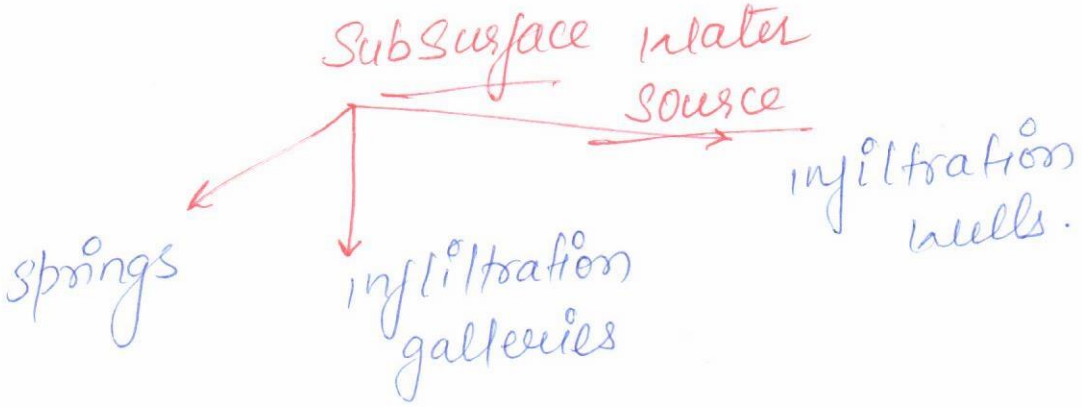
Uses of Water

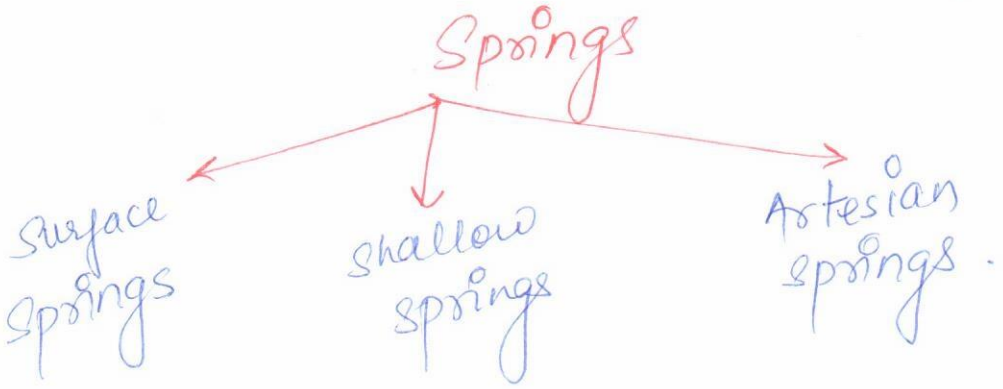


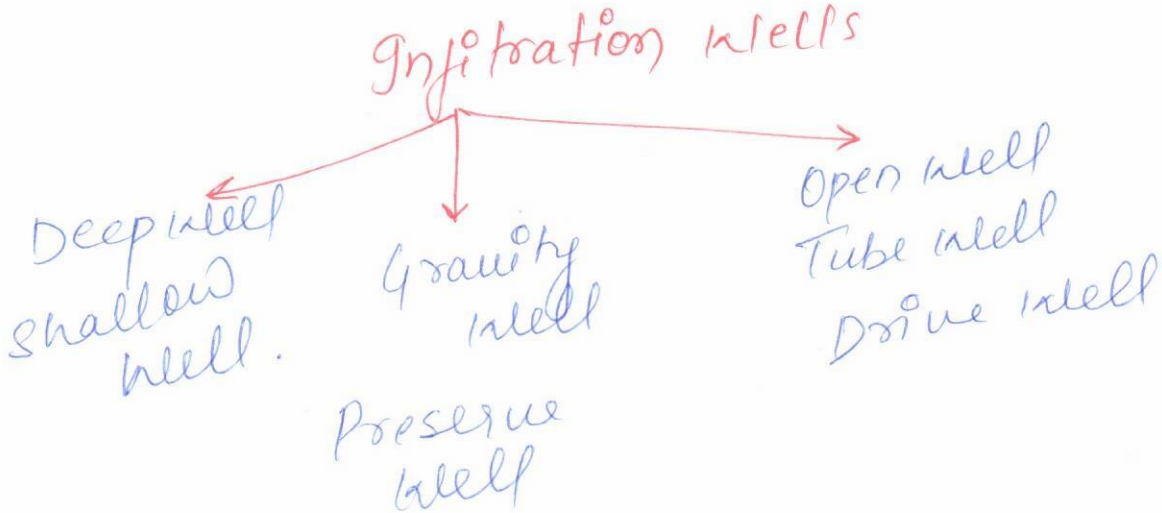
Source of Water




Surface water source
Lakes and Ponds.
Rivers and stream
Impounding Reservoirs


Subsurface water source
springs
infiltration galleries
infiltration wells.


Springs
Surface Springs
shallow springs
Artesian springs.


Infiltration wells
Deep well shallow well.
Gravity well
Open well
Tube well
Drive well
Preserve well

Surface water source:- When water from rain or snow melting flows over the earth surface is called surface water

Sub-Surface water :- OR underground water :-

Springs :→ When subsurface water comes out of surface automatically in hilly area they are called springs.

Infiltration galleries :- horizontal wells are constructed at the depth of 6m along the bank of river.

Infiltration well :→ Circular wells are dug out- Vertically into the ground for getting sub surface water

Source of Contamination and prevention

water pollution is the degradation of quality of wate due to addition of substance, factors. which mak it unfit for human use and is a health hazard.

Source of water pollution

- Domestic waste
- Sewage
- Industrial waste
- Oil spills
- Solid particle mud, plant material.
- Deoxygenation.

Control of water pollution :→

- Avoid bathing and washing of clothes in streams, tanks etc.
- Separate ponds and tanks for cattle and other animal.
- Treatment of domestic waste, sewage.
- avoid over use of fertilizers and pesticides.
- cooling hot water of industries before releasing in water bodies.
- Recycling of the solid waste.

Purification of water for drinking method.

- Purification at large scale
- storage of water
- filteration of H_2O
- Disinfection of H_2O
- safety of water

filteration of water.

- Slow sand filter
- Rapid sand filter

Purification on small scale.

- Boiling
- filteration
- Chemical Disinfection
  - Chlorinated lime
  - Iodine
  - Perchloron
  - chlorine tablet

Disinfections of well

Sanitary well:-

- Dug the well deep up to the second layer of H_2O.
- There should be no source of waste with in 50 feet from the well eg- toilet, compost pit etc.
- The brick walls of the well should be plastered so that roots of a tree may not reach the well.
- The well must be covered from above.
- A - 2-2.5 feet high wall with slope towards outside should be erected around the well.
- A 3 feet wide area around the wall of the well should be pucca and plastered with slop towards outside.
- The waste water should be drained away from the well

Disinfection of a Tank :→ Measure the length and breath of the tank in feet.

1) Residual chlorination :- presence of extra free calorie than required is called residual chlorine. It is good for prevention of further contamination of H_2O.

2) Breakpoint chlorination :- If the amount of free chlorine is 1 ppm then we use this water. if the amount of chlorine falls below 1 ppm, it is called chlorination breakpoint.

3) Dechlorination :- If the quantity of free chlorine is in excess then it can cause flatulence, GI distru bence.

4) orthotolidine Test :- It is used to determine the amount of chlorine present in free or combined form.

Water Borne Disease And prevention

Viral Disease: Hepatitis A, Hepatitis E, poliomyelitis

Rotavirus diarrhea in infants.

Bacterial disease

- cholera.
- E. coli
- Typhoid
- para Typhoid fever
- bacillary dysentry

Protozoal Disease

- Amoebiasis
- Giardiasis.

Helminth Disease

- hydatid disease.
- Round worm
- Thread worm

Due to presence of aquatic host :- Guinea worm

Due to breeding of mosquitoes over polluted water

Prevention of Disease :-

Covering the drainage nullas of waste water.
Safe Sewage disposal
Sewage Treatment.
Safe disposal of human excreta.
use of sanitary latrines.
frequent change of water or air coolers or its disinfection.
Preventing stagnation of water in ditches,

Containeers etc. during rainy season.

- Disinfection of wells, tanks, ponds.
- Control of mosquitoes.
- use of mosquitoes nets and mosquito repellants.
- purification and disinfection of drinking water eg:- chlorination.
- Early diagnosis and treatment of injectious disease.
- Isolation of injected patients.