CONCEPT MAP

CHEMISTRY IN EVERYDAY LIFE

Chemicals in

Medicines

- **Analgesics :** Reduce pain
  - **Non addictive :** *e.g.* aspirin (2-acetoxy benzoic acid), paracetamol (4-acetamidophenol), naproxen, ibuprofen, diclophenac sodium or potassium.
  - **Addictive :** Heroin, morphine, codeine, etc.
- **Tranquilizers :** For treatment of stress, fatigue, mental diseases (antidepressant). *e.g.*, iproniazid, phenelzine (nardil), chlordiazepoxide, equanil, valium, etc.
- **Antiseptics :** Prevent the microbial growth and may even kill them, applied to living tissues. *e.g.* furacin, soframycin, dettol, savlon, etc.
- **Disinfectants :** Antibacterial, not safe to apply to the living tissues. *e.g.* cresols, etc.
- **Antimicrobials :** Cure diseases caused by microbes. *e.g.* salvarsan, prontosil, azodye, sulphanilamide, etc.
- **Antifertility drugs :** To control the menstrual cycle and ovulation. *e.g.* norethindrone, novestrol, etc.
- **Antibiotics :** Produced by microorganisms and inhibit the growth or kill other microorganisms.
  - **Bactericidal :** Pencillin, ofloxacin, streptomycin, etc.
  - **Bacteriostatic :** Erythromycin, tetracycline, chloramphenicol, etc.
- **Antacids :** Neutralize the excess acid and raise the pH to an appropriate level in stomach. *e.g.* sodium bicarbonate, aluminium hydroxide gel, histamine, zantac, etc.
- **Antihistamines:** Interfere with the natural action of allergy causing histamines. *e.g.* brompheniramine, terfenadine, etc.

Food

- **Preservatives :** Protect food againts bacteria, yeasts and moulds.
  - **Class I :** Table salt, sugar, vegetable oils.
  - **Class II :** Sodium benzoate, sorbic acid, epoxides, etc.
- **Artificial sweetening agents :** *e.g.* saccharin, aspartame, alitame, sucrolose, etc.
- **Antioxidants :** To prevent oxidation of fats in processed foods (chips, biscuits etc.) regarded as sacrifical materials. *e.g.* butylated hydroxytoluene (BHT), butylated hydroxyanisole (BHA), ascorbic acid, etc.

Cleansing Agents

- **Soaps :** Sodium or potassium salts of higher fatty acids such as lauric acid ($C_{11}H_{23}COOH$), palmitic acid ($C_{15}H_{31}COOH$), etc.
- **Detergents :** Ammonium sulphonate or sulphate salts of long chain hydrocarbons containing 12-18 carbon atoms.
  - **Anionic :** Larger part are anions (involved in cleansing action). *e.g.* Sodium alkyl sulphates , sodium alkylbenzene sulphonates.
  - **Cationic :** Cations are major part. (in cleansing action).
    - **Invert soaps :** *e.g.* cetyltrimethyl-ammonium bromide.
  - **Non-ionic :** Do not contain any ions, are esters of high molecular mass alcohols. *e.g.* lauryl alcohol ethoxylate.
- **Cleansing action :** Soap molecules form micelle around the dirt, hydrophobic part → in dirt, hydrophilic part → out of the dirt like bristles, polar group interact with water, dirt pulled in water and removed.