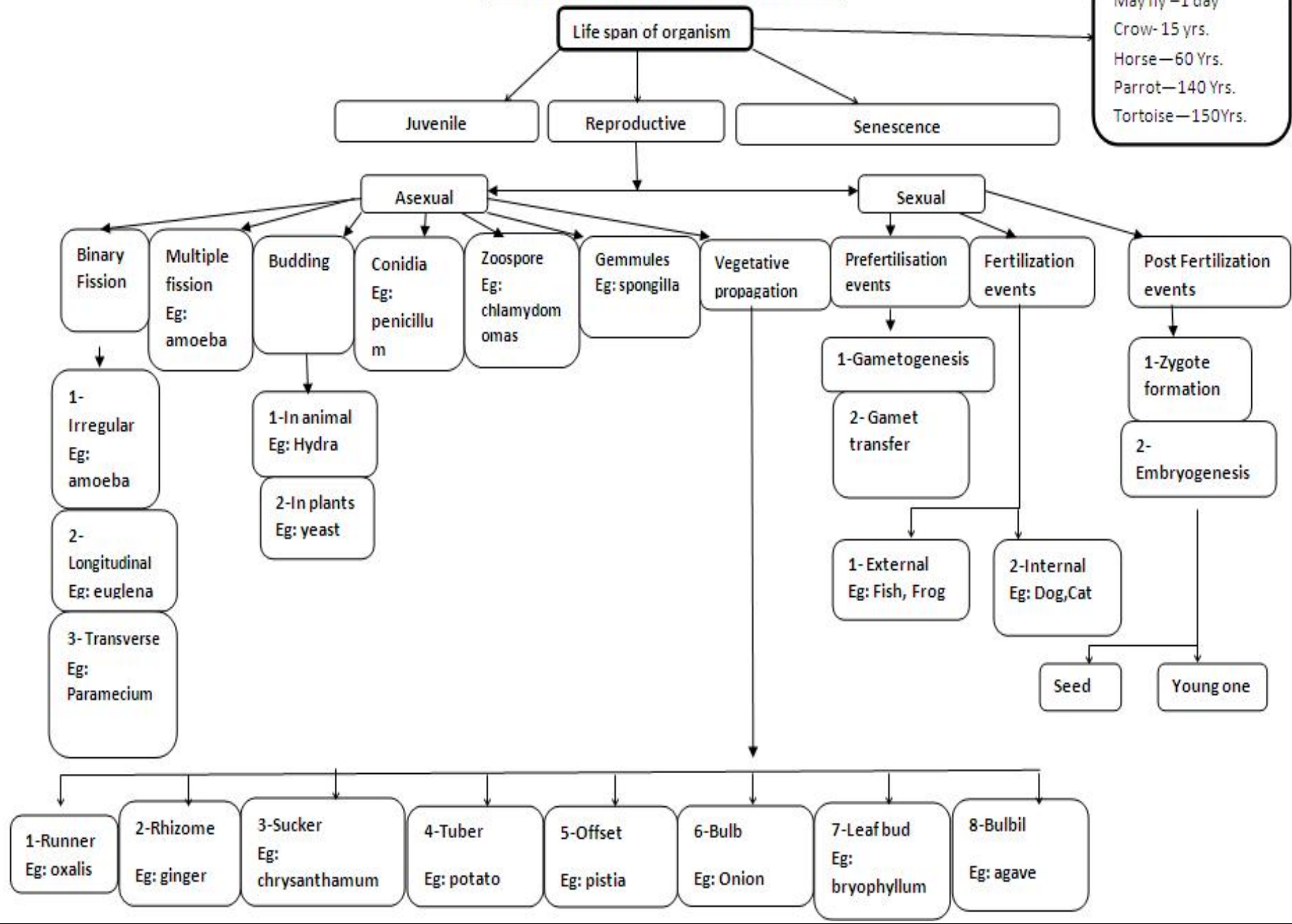


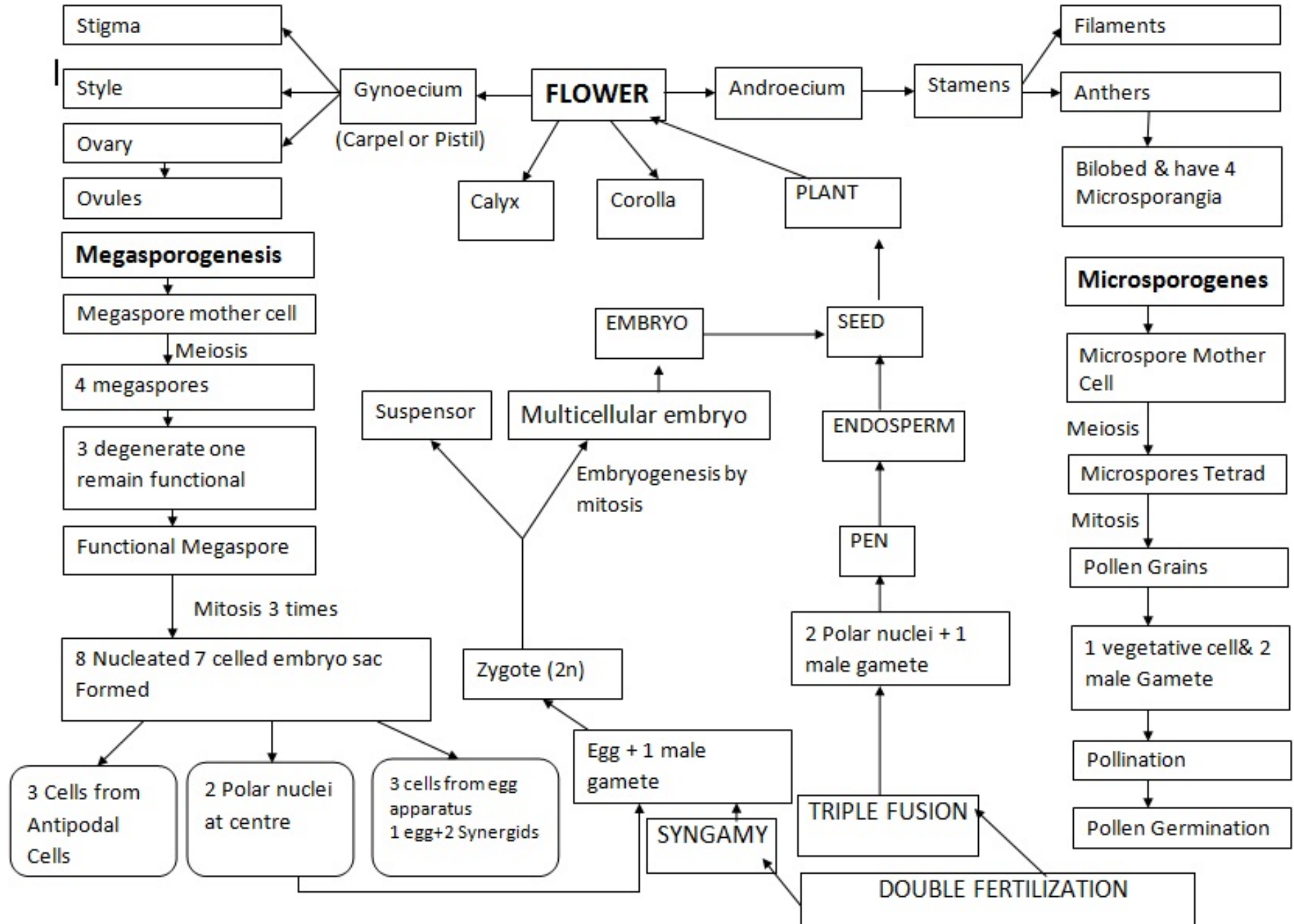
CHAPTER-I

Concept Mapping on Reproduction in organisms

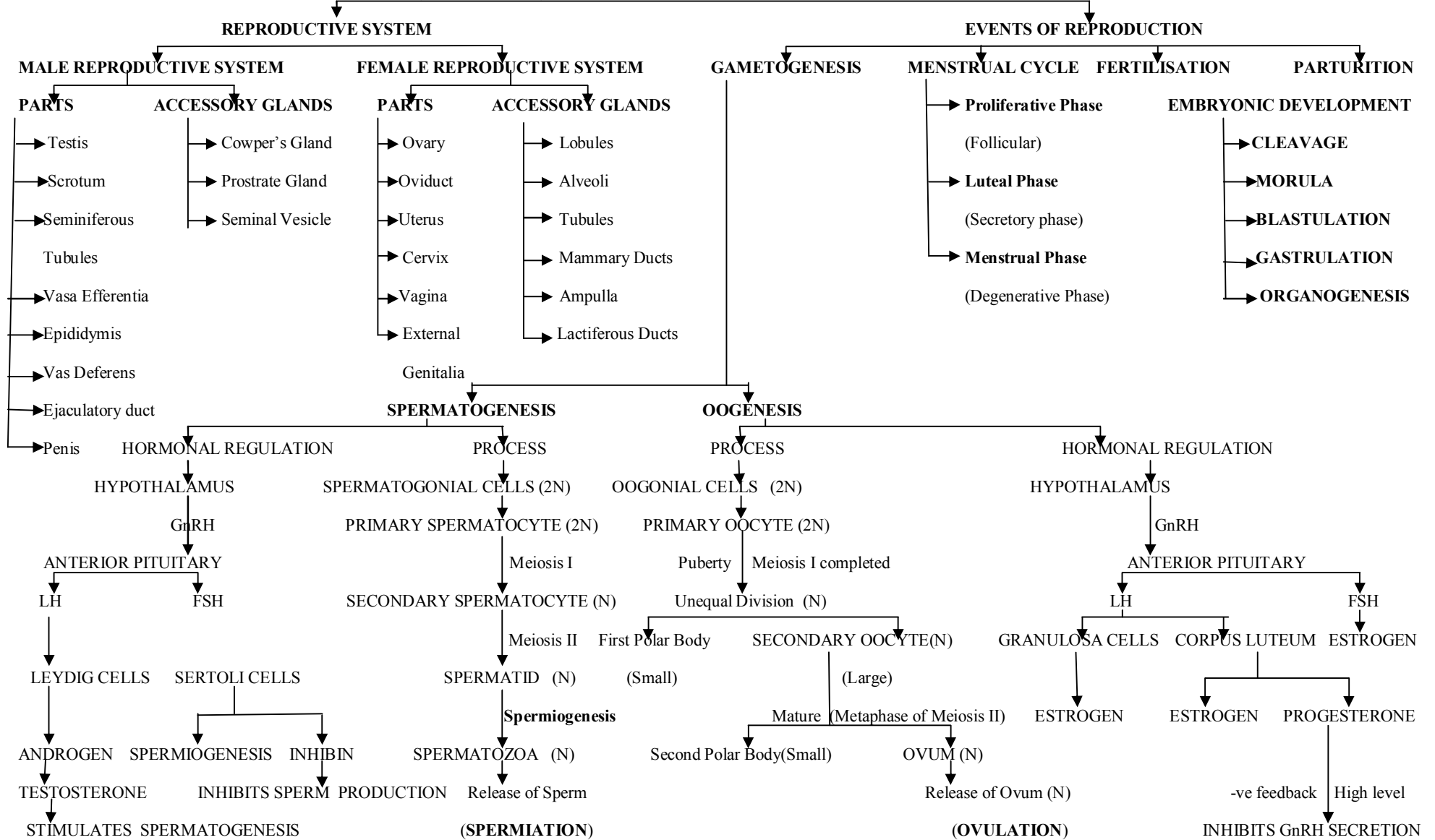
May fly -1 day
Crow- 15 yrs.
Horse -60 Yrs.
Parrot-140 Yrs.
Tortoise-150Yrs.



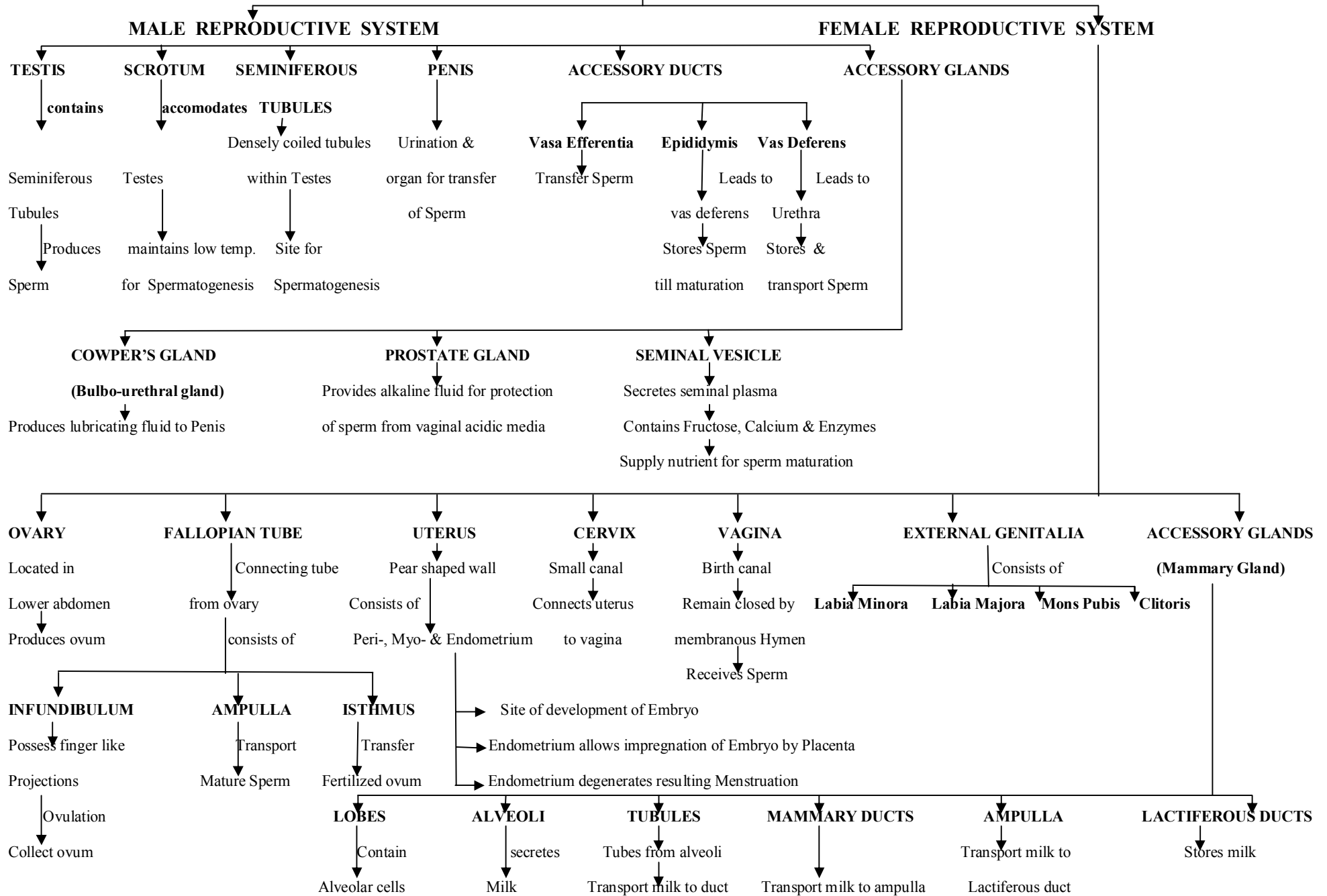
CHAPTER- 2 Sexual reproduction in flowering plants



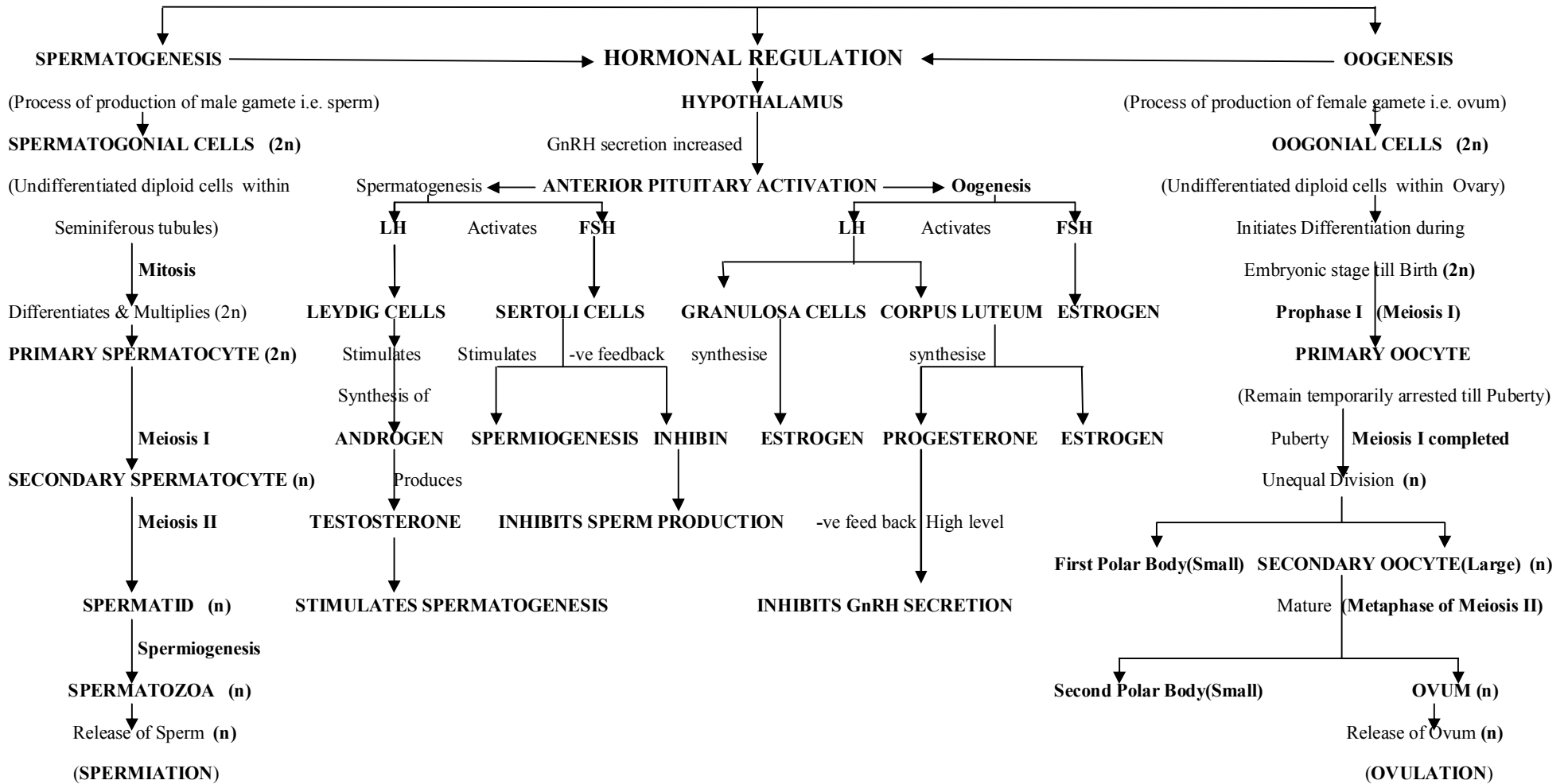
(CHAPTER-3): HUMAN REPRODUCTION



HUMAN REPRODUCTION



GAMETOGENESIS



CONCEPT MAP (C4)

PHASES OF MENSTRUAL CYCLE

(Occurs in female at puberty)

MENSTRUATION PHASE(3-5 days)

(In absence of fertilization of ova)

Rupture of endometrium lining of uterus

Release of blood, serous fluid,

mucosa, unfertilized ova

FOLLICULAR/PROLIFERATIVE PHASE(6-12 days)

(Reduced concentration of Gonadotropin)

Stimulates Hypothalamous

release of GnRH

Inhibits

ANTERIOR PITUITARY(Activated)

Gonadotropin produced

LH

FSH

Ovarian follicle enlarges

(Stimulated by LH)

Granulosa cells

Corpus Luteum

Synthesize

Synthesize

Estrogen

Inhibin

Estrogen & Progesterone

Increased secretion

Endometrium prepares for implantation

Inhibits contraction of uterus Rupture of Graafian Follicle

High level of LH

Bind with

Maturation of secondary oocyte

Release of Ovum

OVULATION

LUTEAL/SECRETORY PHASE(12-14 days)

(Begins after ovulation)

Secretion of LH

Corpus Luteum formed

secretes

Inhibin

Estrogen

Progesterone

(less secretion)

(More secretion)

(less secretion)

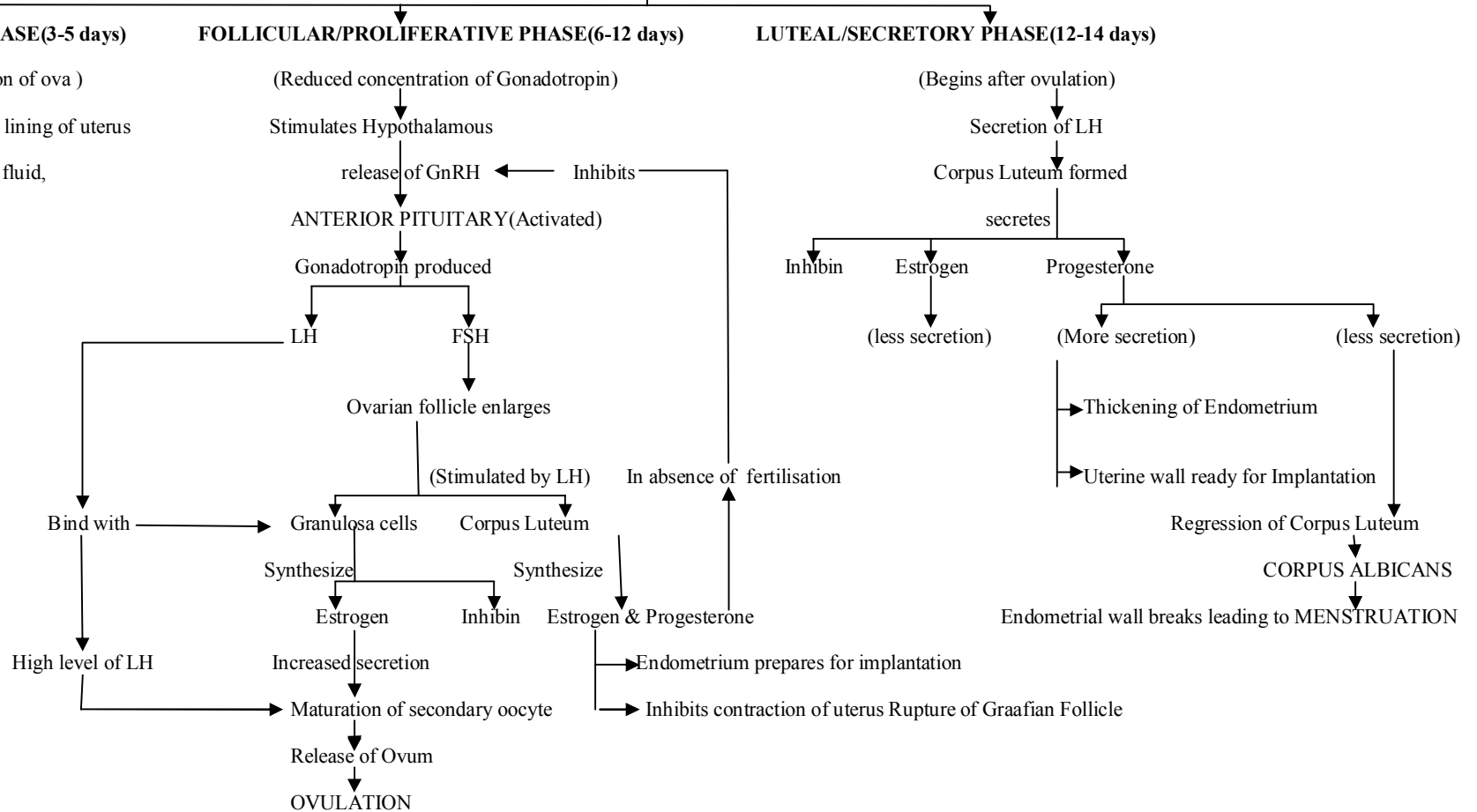
Thickening of Endometrium

Uterine wall ready for Implantation

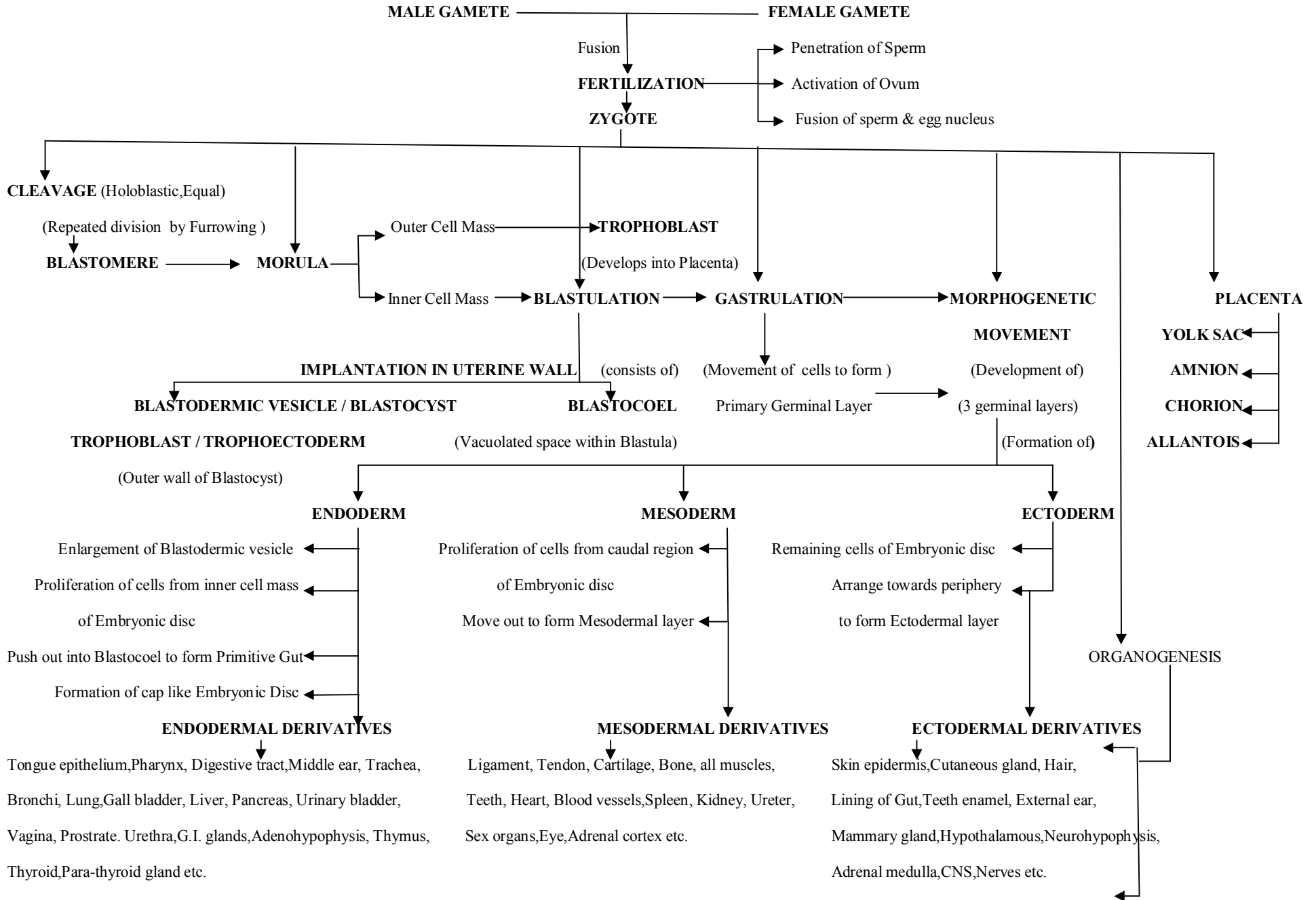
Regression of Corpus Luteum

CORPUS ALBICANS

Endometrial wall breaks leading to MENSTRUATION



EMBRYONIC DEVELOPMENT



ADDITIONAL SPECIAL NOTES:

TYPES OF EGGS

- Alecithal: Without yolk
- Microlecithal: With small amount of yolk
- Mesolecithal: With moderate amount of yolk
- Macrolecithal: With large amount of yolk
- Heterolecithal: With unevenly distributed amount of yolk

TYPES OF CLEAVAGE

- Holoblastic :Complete division of zygote
 - i) Equal:Cell size same after division
 - ii) Unequal:Cell size differ after division
- Meroblastic :Division restricted to animal pole at tip

TYPES OF BLASTULA

- Stereoblastula : Solid mass
- Coeloblastula : With blastocoel
- Discoblastula : Disc shaped
- Periblastula : With central yolk

TYPES OF PLACENTA

BASED ON FOETAL MEMBRANE

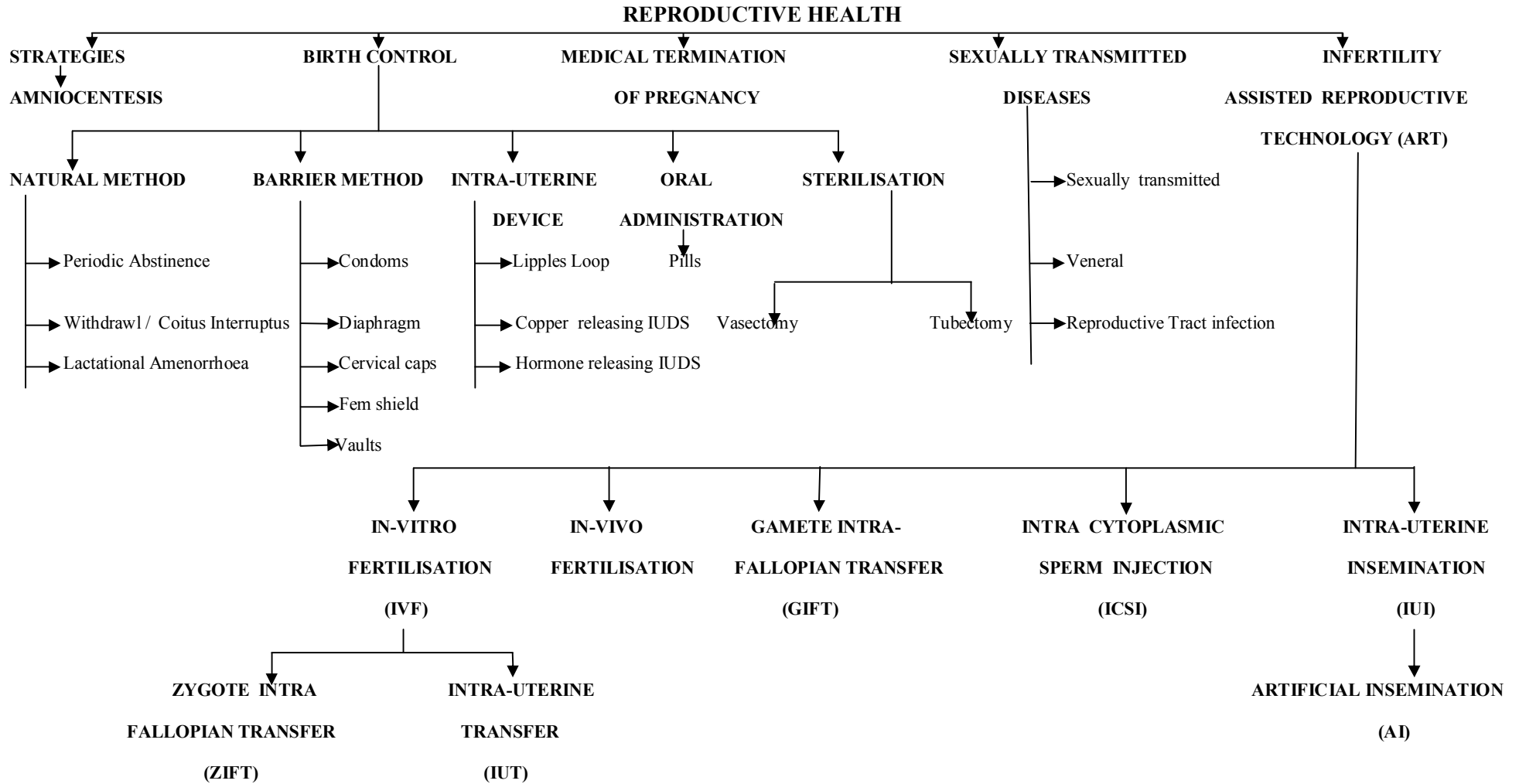
- **Yolk sac placenta** :Derived from yolk sac & chorion
- **Chorioallantoic** : Derived from chorion & allantois
- **Chorionic** : Derived from mostly chorion

BASED ON BARRIERS

- **Epitheliochorial**: All attached membranes present
- **Syndesmochorial**:Uterine epithelium absent
- **Endotheliochorial**: Uterine epithelium & connective tissue absent
- **Haemochorial**: Uterine barrier absent
- **Haemoendothelial**: All barriers except foetal endothelial blood vessel absent

BASED ON FATE OF UTERINE PLACENTA

- **Non deciduate** :Uterine placenta not shed
- **Deciduate** : Uterine placenta shed after birth
- **Centra deciduate** : Whole placenta absorbed



REPRODUCTIVE HEALTH

ASSOCIATED PROBLEMS

- Lack of awareness
- Sex related Myth & Misconception
- Common STDs
- Population explosion
- Illegal abortion of foetus
- Congenital & acquired infertility

AIM TO SOLVE PROBLEMS

- Create awareness
- Sex education
- Prevention of STDs
- Educate fertile couples
- Provide medical facilities
- Manage reproductive disorder
- Reduce infertility problem

STRATAGIES

- Strict follow up of legal ban on Amniocentesis
- Follow up of child immunisation
- Up-gradation of health care based on reproductive health,
- Corrective measures of disorder & infertility
- Legal right of MTP for due reasons
- Enhance RCH Programme

(REPRODUCTIVE & CHILD HEALTH CARE)

Creating reproduction related awareness to mankind by Govt. / NGOs

Provide facilities for reproductively healthy society

Sex education at school level

Educate people for social consciousness about safe conception, child birth, Pre/ Post natal child care, equal opportunities to male/ female child, importance of population explosion.

POPULATION EXPLOSION

NEED OF STUDYING

HUMAN POPULATION

- Consequences of uncontrolled population growth
- Advantages of small family
- Population density & food availability
- Life standard in accordance with overpopulation
- Control measure to avoid overpopulation

FACTORS DETERMINING

POPULATION GROWTH RATE

- Birth rate(Natality) & Death rate(Mortality)
- Total fertility rate (TFR)
- Replacement rate (Zero growth rate)
- Count of active reproductive age
- Emigration & Immigration rate

CAUSES OF INCREASE IN

POPULATION GROWTH

- Decline in death rate
- Control of disease
- Reduced infant mortality rate
- Improved community health
- Improved agricultural practices

CONSEQUENCES OF

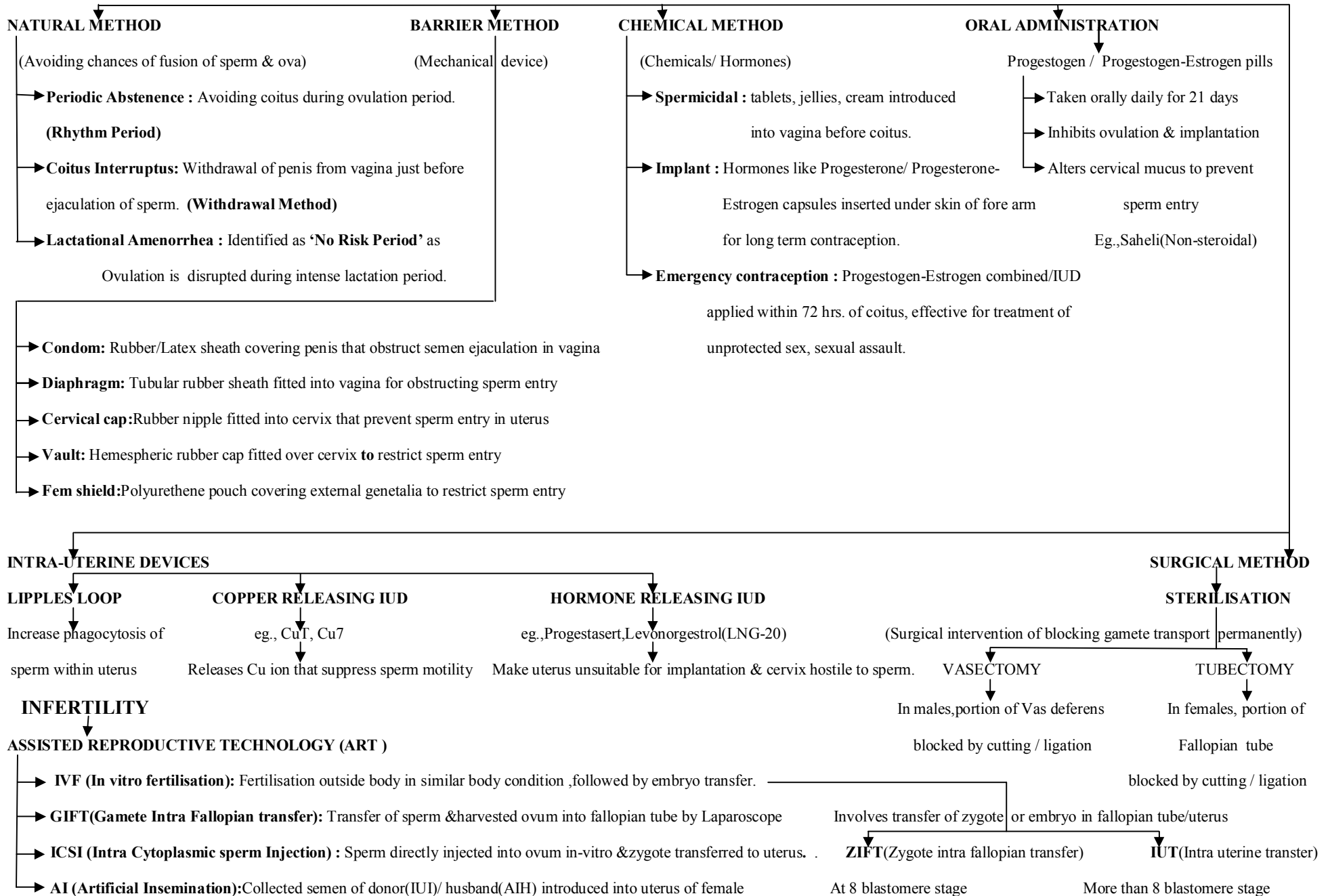
OVER POPULATION

- Scarcity of space
- Shortage of food supply
- Unemployment & price rise
- Pollution & energy crisis
- Eco-degration
- **Population Explosion**

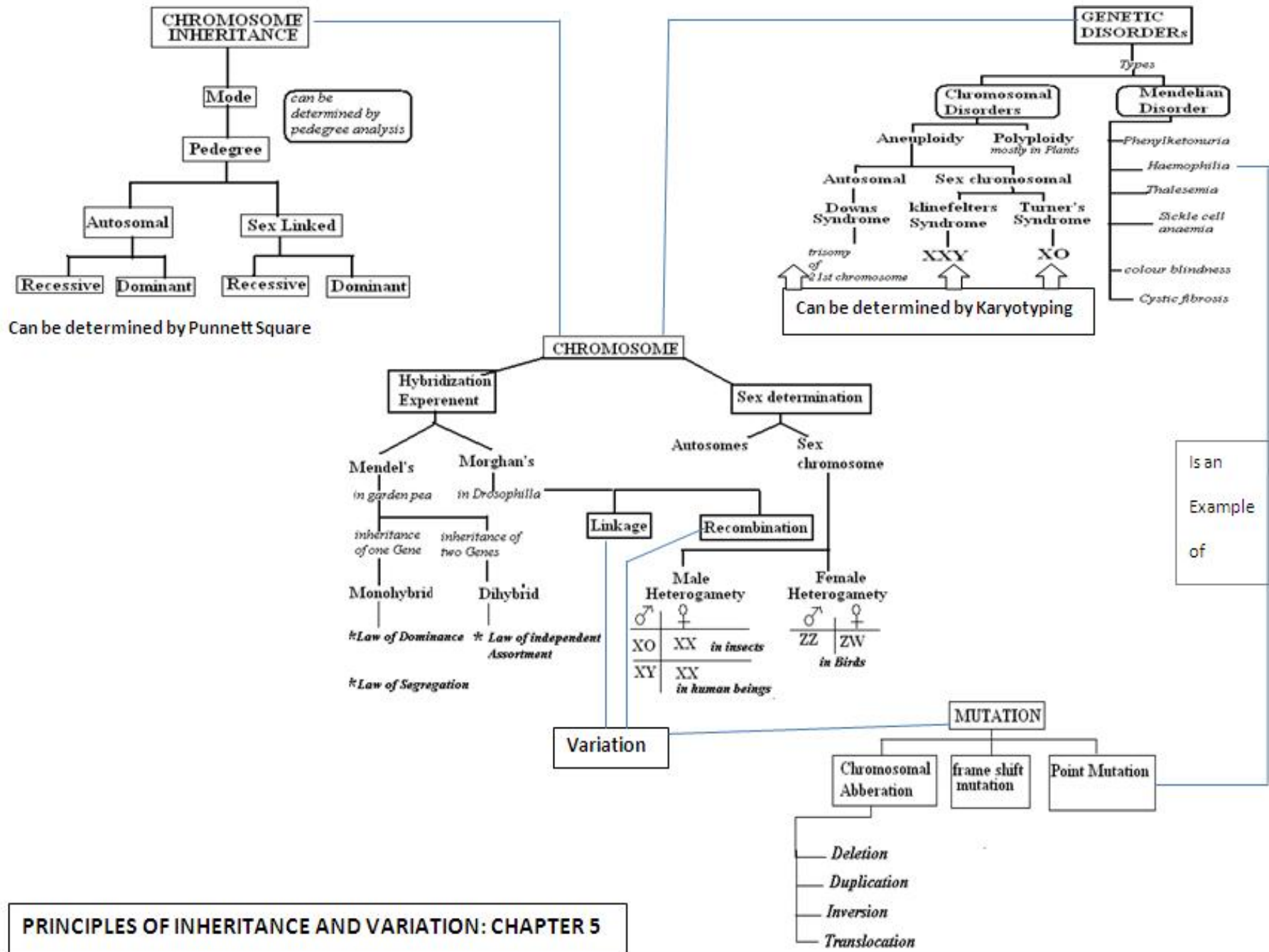
CONTROL MEASURES

- Education about advantages of controlled child birth
- Legal norms for raising age of marriage
- Encouraging Family Planning & birth control
- Incentive for sterilisation
- Easy availability of contraceptive devices at cheaper rates

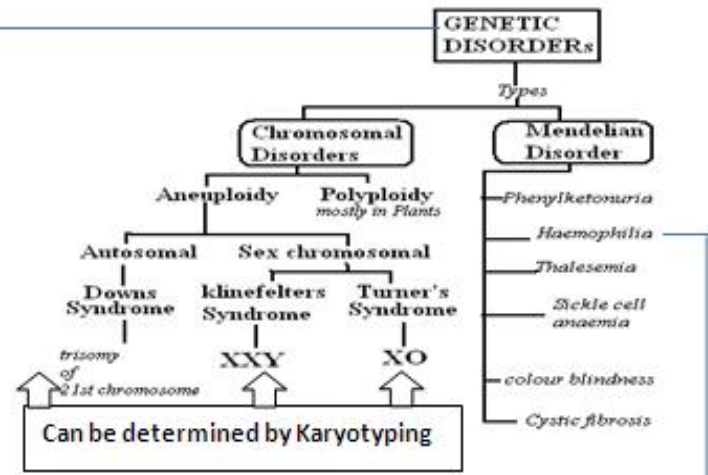
BIRTH CONTROL



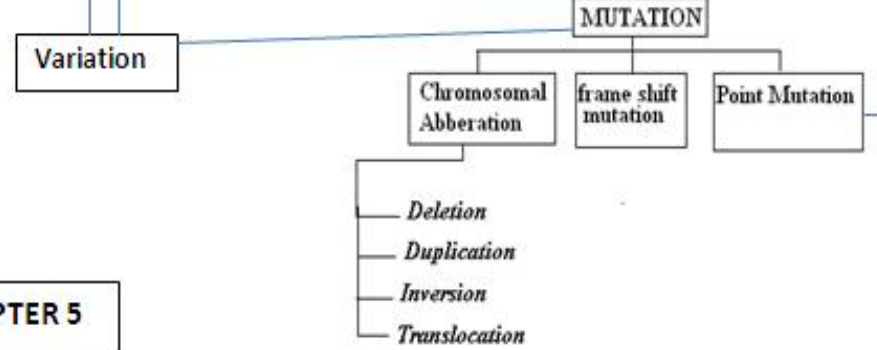
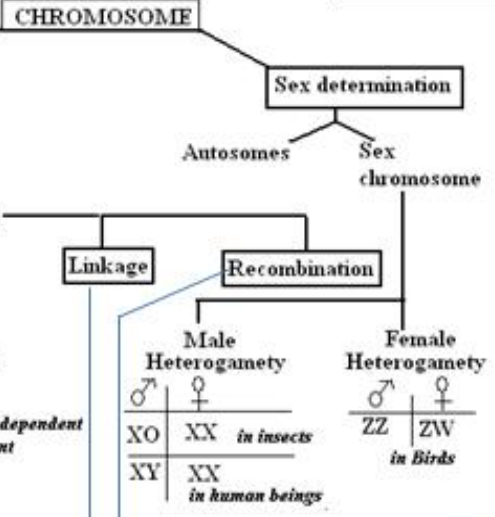
CHAPTER- 5 Principles of inheritance and variation



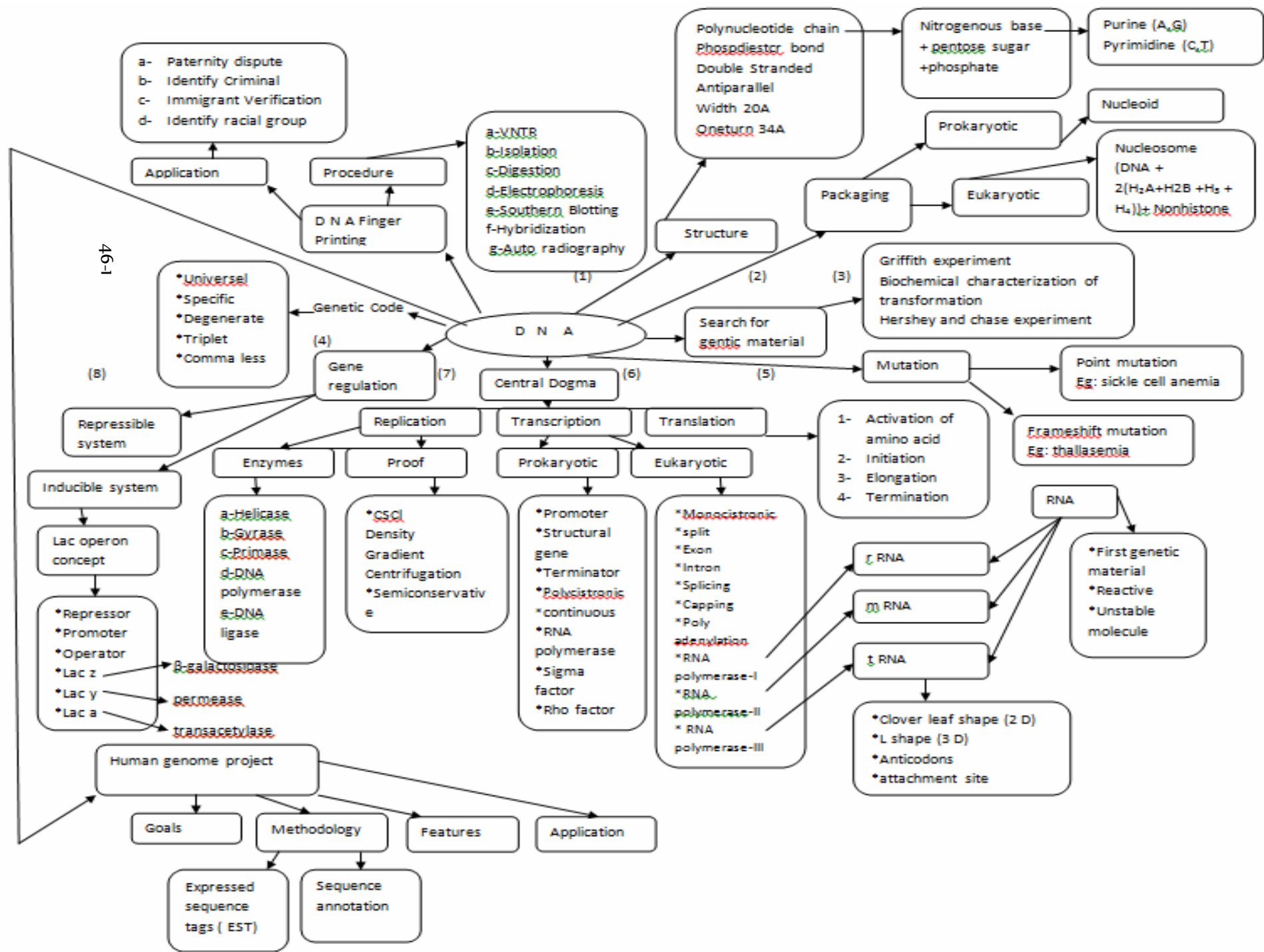
PRINCIPLES OF INHERITANCE AND VARIATION: CHAPTER 5



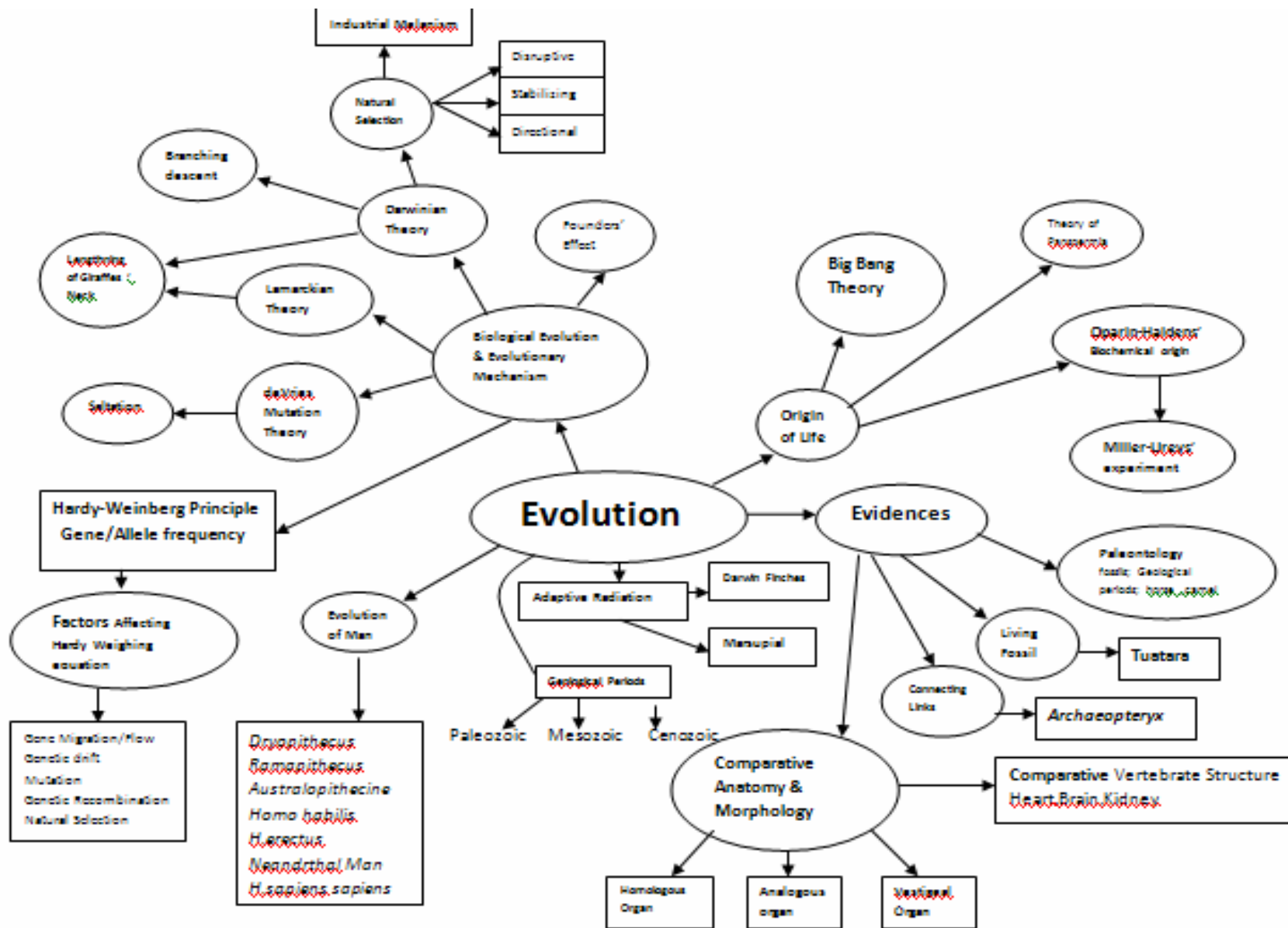
Is an Example of



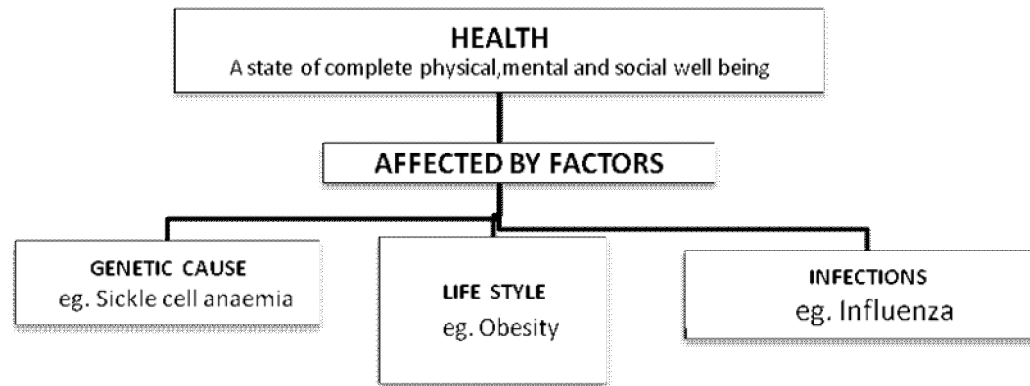
CHAPTER- 6 Molecular basis of inheritance



CHAPTER- 7 CONCEPT MAP IN EVOLUTION



CHAPTER- 8 HUMAN HEALTH AND DISEASE



COMMON INFECTIOUS DISEASES

Ringworms	<i>Microsporum, Trichophyton, Epidermo phyton.</i>	Dry scaly lesions on skin, scalp, nail. Intense itching.	From soil, by using clothes, towels, comb of infected person.
Name of disease	<i>Causal organism</i>	<i>Symptoms</i>	<i>Transmission</i>
Common cold	Rhino virus	Nasal congestion & discharge, sore throat, cough, headache for 3 to 7 days	By droplet infection
Pneumonia	Bacteria- <i>Streptococcus pneumoniae</i>	Alveoli get filled with fluid, problem in respiration, fever, chill, cough.	By inhaling droplets/aerosols released by infected persons, sharing utensil.
Malaria	Protozoa- <i>Plasmodium vivax</i>	Chill, high fever recurring every 3-4 days. due to rupture of RBC. Haemozoin released in blood	By female <i>Anopheles</i> mosquito bite.
Filaria	Helminthic worm- <i>Wuchereria bancrofti, W. malayi</i>	Chronic inflammation of organs, specially lower limbs, genital organs affected	By bite of female culex mosquito

TYPES OF DISEASES

INFECTIOUS
eg. leprosy (easily transmitted)

NON-INFECTIOUS
eg. cancer (not transmitted)

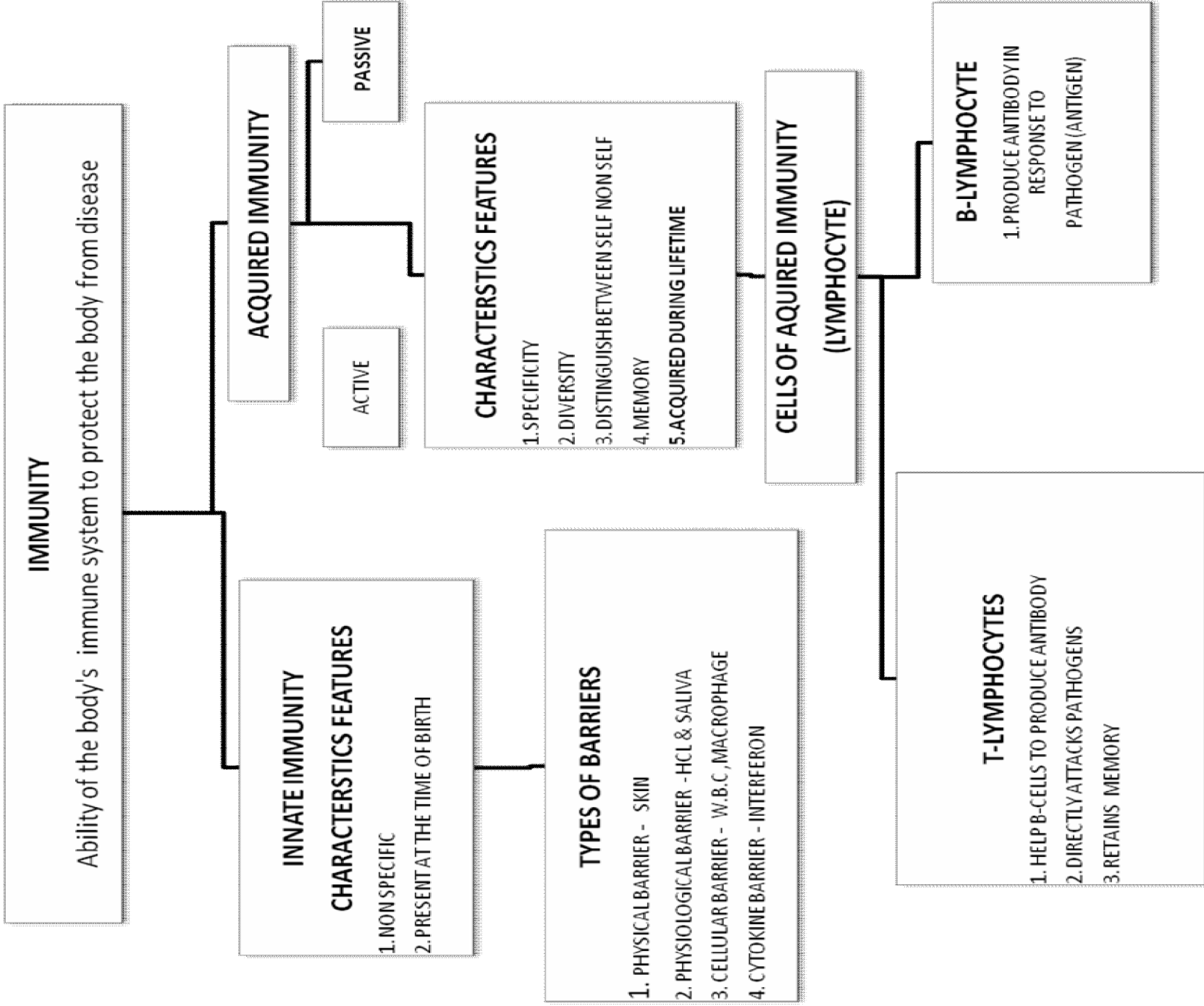
MODES OF TRANSMISSION
*By air
*By water
*By physical contact
*By animals

CAUSES
*Stress
*No/less physical activity
*Genetic
*Unsuitable diet
*Wrong life style
*Exposure to carcinogens

TYPES OF INFECTIOUS DISEASES
1. Viral (e.g. COMMON COLD,2.
Bacterial (e.g. Typhoid)
3. Fungal (e.g. Ringworm)
4. Helminthic (e.g. FILARIA)
5. Protozoal (e.g. MALARIA)

Control Measures
1. Management of Stress
2. Physical Exercise
3. Balanced Diet
4. Avoid Drugs Alcohol and Tobaccoe

Control Measures
1. Balanced Diet
2. Good Personal Hygeine
3. Awareness about Disease
4. Vaccination
5. Hygenic food and water source



Lymphoid Organs

Primary Lymphoid Organ

1. Bone Marrow
2. Thymus

Function:

Provide microenvironment For the development and Maturation of lymphocyte

Secondary Lymphoid Organ

1. Spleen
2. Lymph Nodes
3. Peyer's Patch
4. Tonsils
5. Mucosal associated lymphoid tissue (MALT)

Function:

1. Spleen: Filter the microbes from blood
2. Lymph Nodes: Trap the microorganisms
3. Peyer's Patch: Present in small intestine and help in the formation of effector cells
4. Tonsils: Trap microbes entering through Mouth
5. MALT: Traps Microbes

TYPES OF ACQUIRED IMMUNITY

ACTIVE IMMUNITY

- Antibody produced within own body
- it is long lasting
- Does not Cause allergy
- Takes time to activate

PASSIVE IMMUNITY

- Antibodies transferred from another individual.
- Not long lasting.
- Sometimes cause allergy
- Provides immediate relief.

Types of Immune Response:

Types of Immune Response

Primary Response

- Exposure of body to pathogen for first time
- Of Low Intensity

Secondary Response

- Subsequent exposure to same pathogen
- Response of body is heightened

Allergy

Common allergens

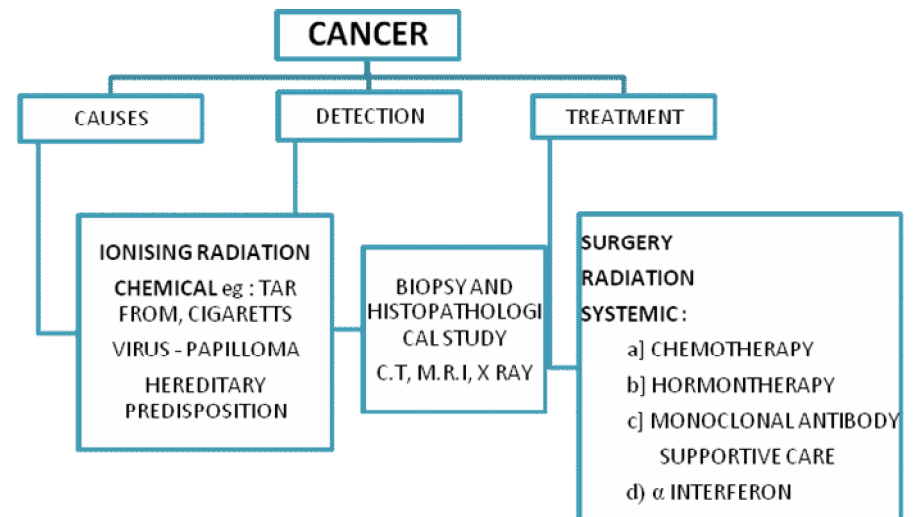
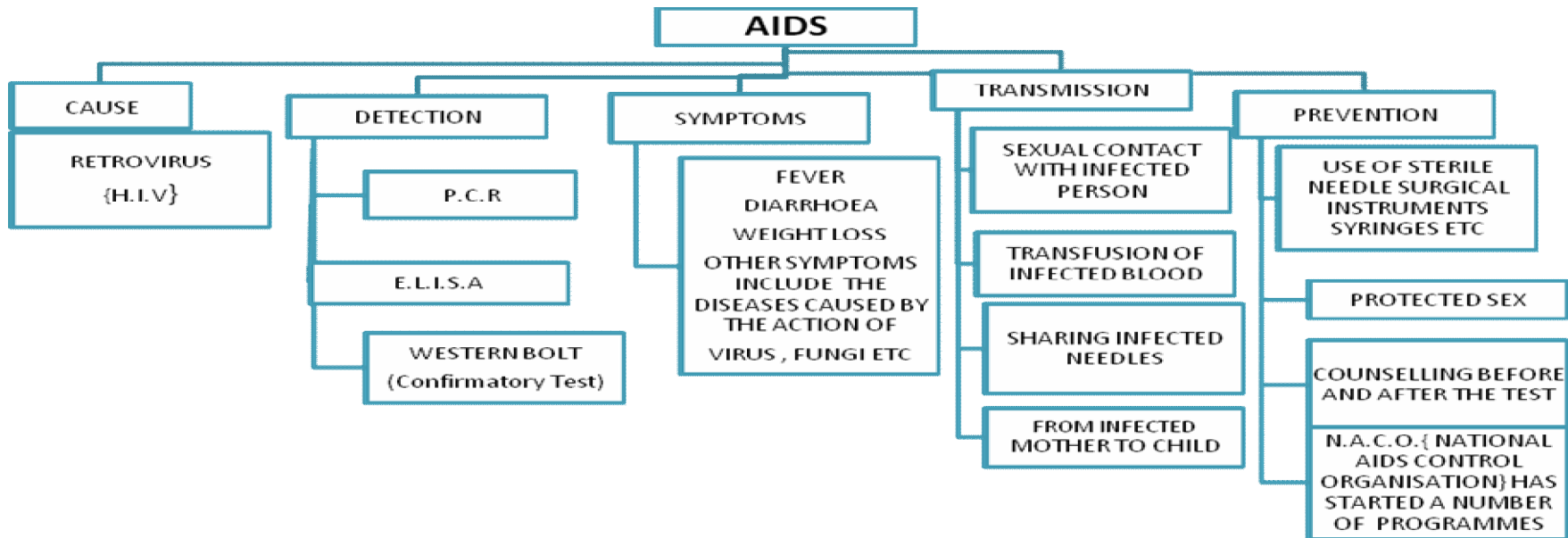
(Substances that cause allergy
Eg:- Dust, Pollen, Fur
Some foods, some
Chemicals)

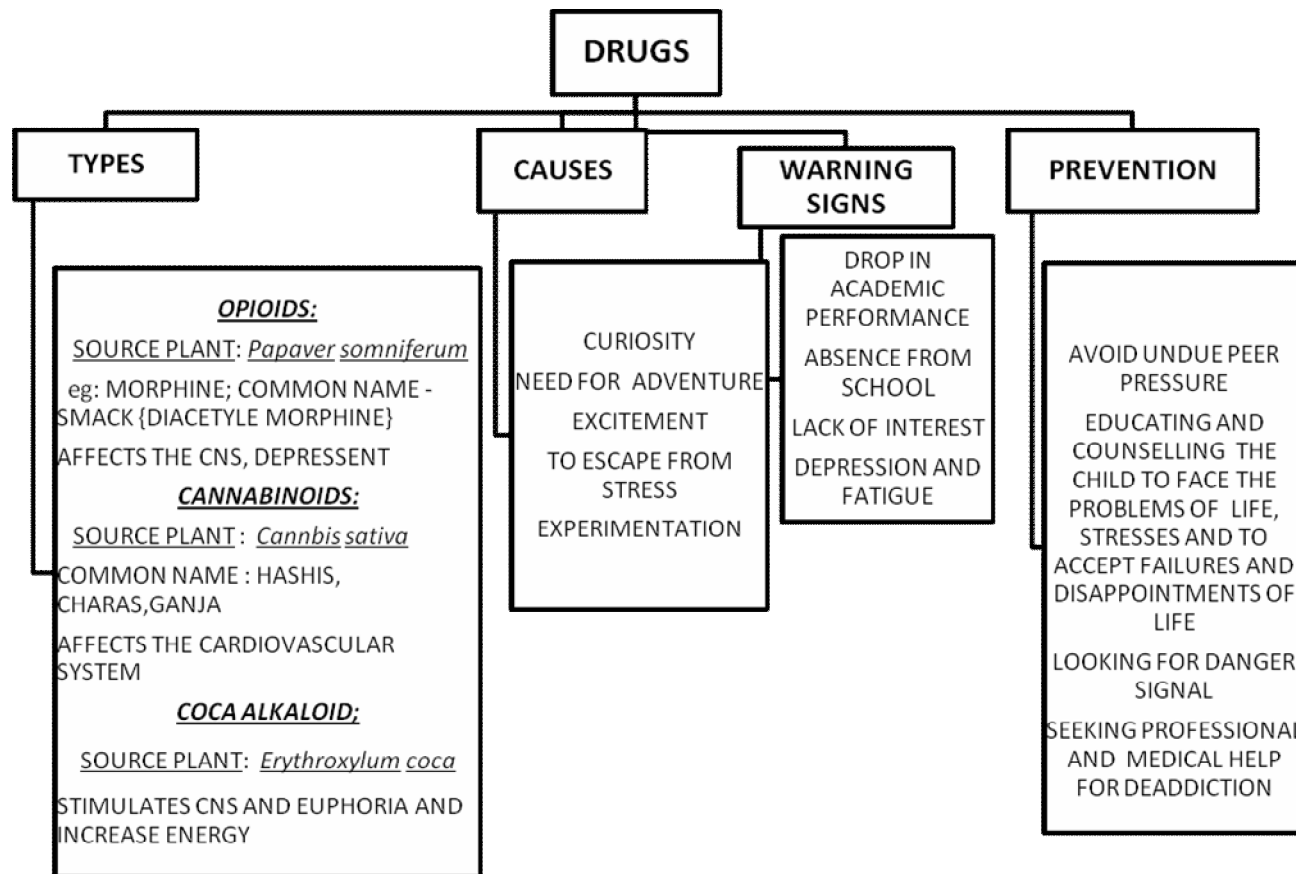
Symptoms

Sneezing
Running nose
Watery eyes
Itching

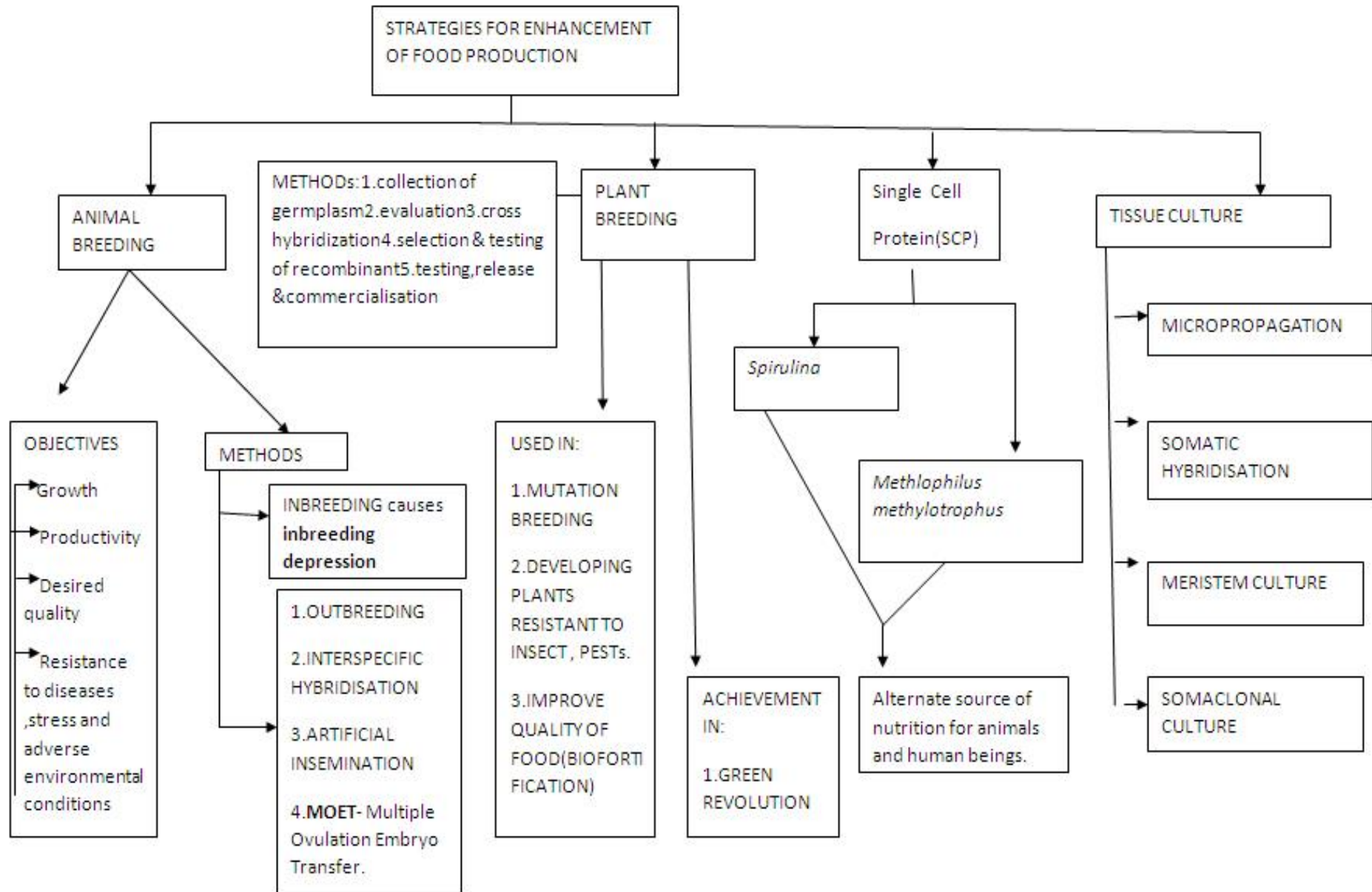
Ways to reduce allergy

Antihistamine
Adrenaline
Steroid



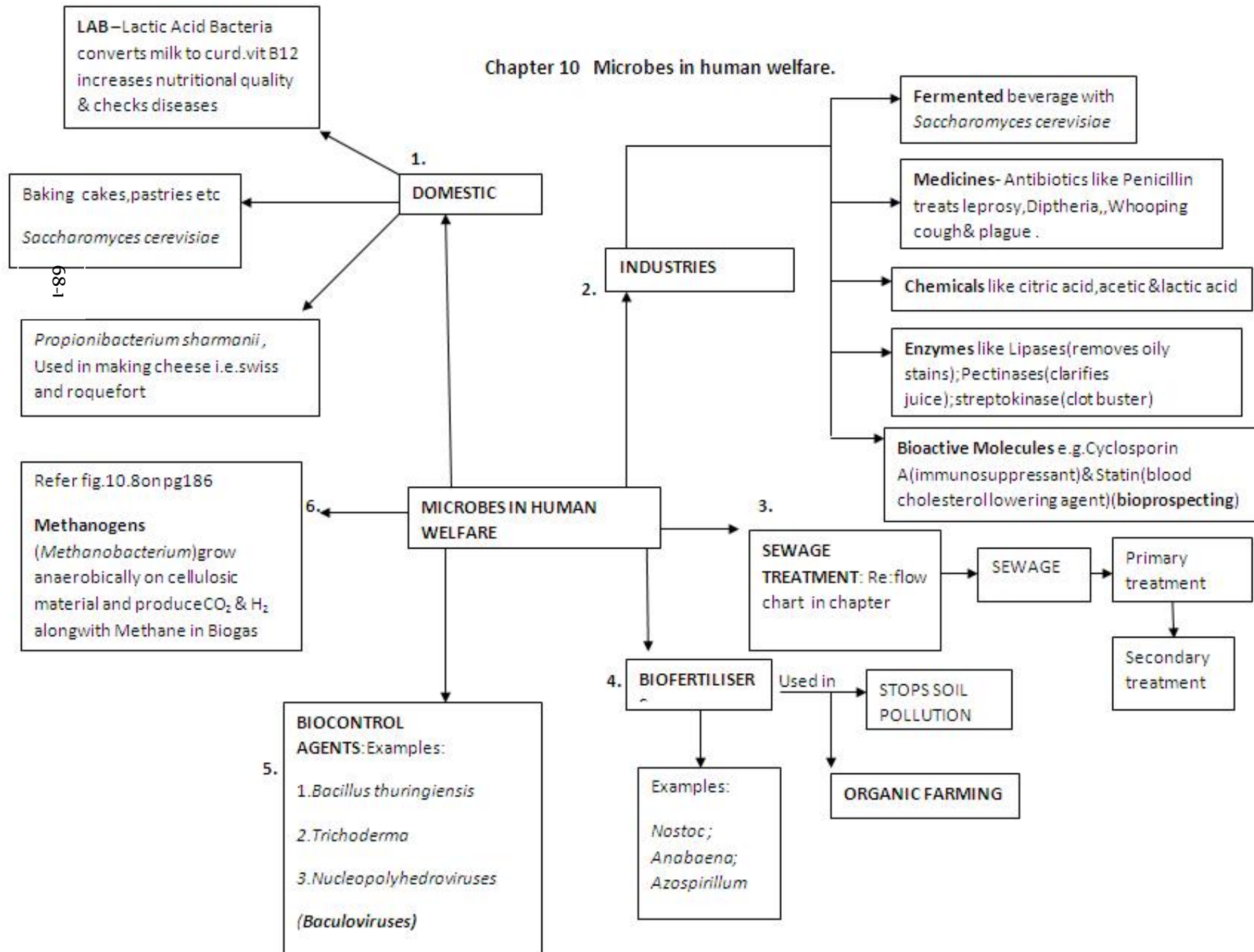


CHAPTER- 9 STRATEGIES FOR ENHANCEMENT OF FOOD PRODUCTION

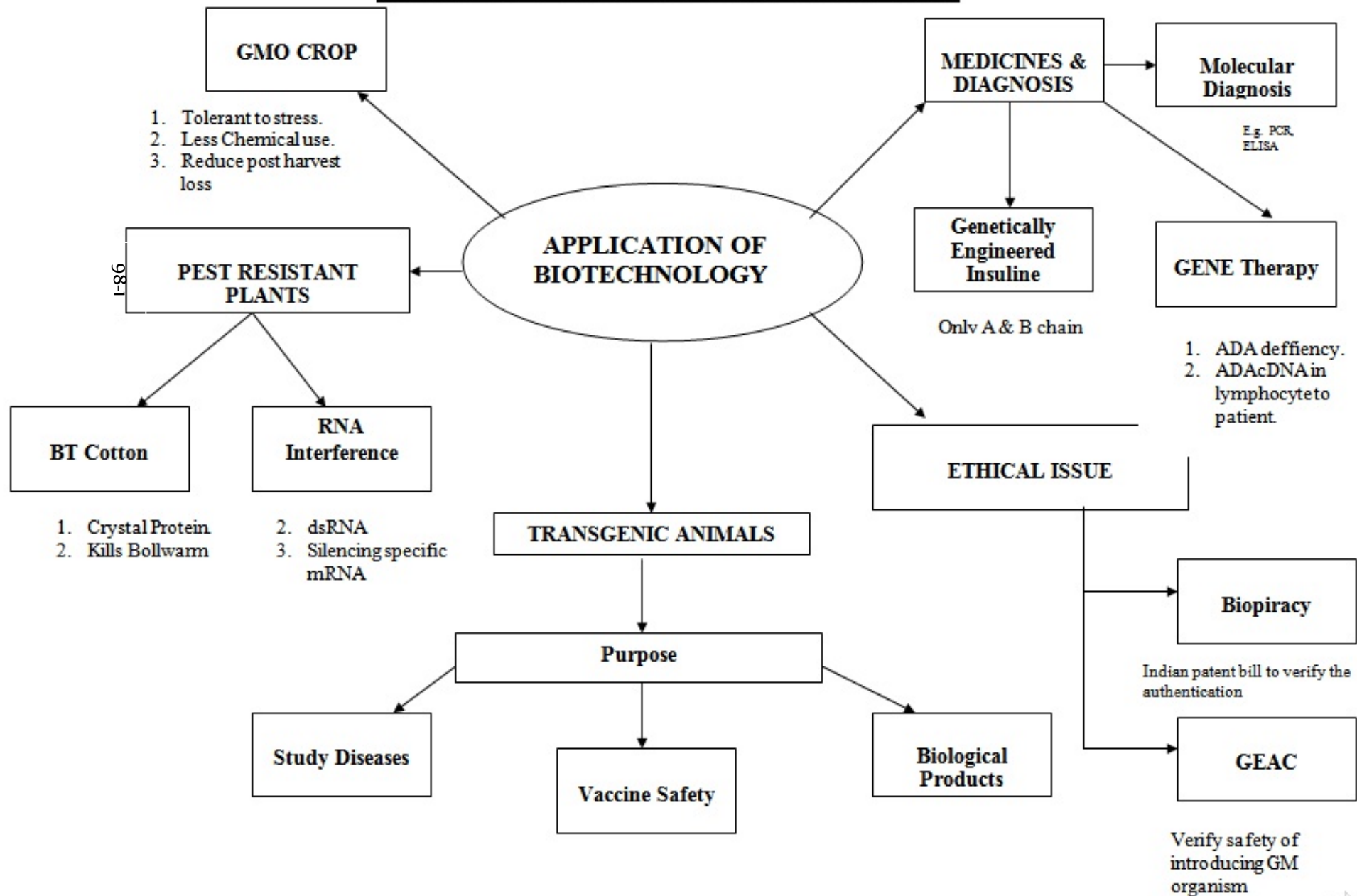


CHAPTER- 10 Microbes in human welfare

Chapter 10 Microbes in human welfare.

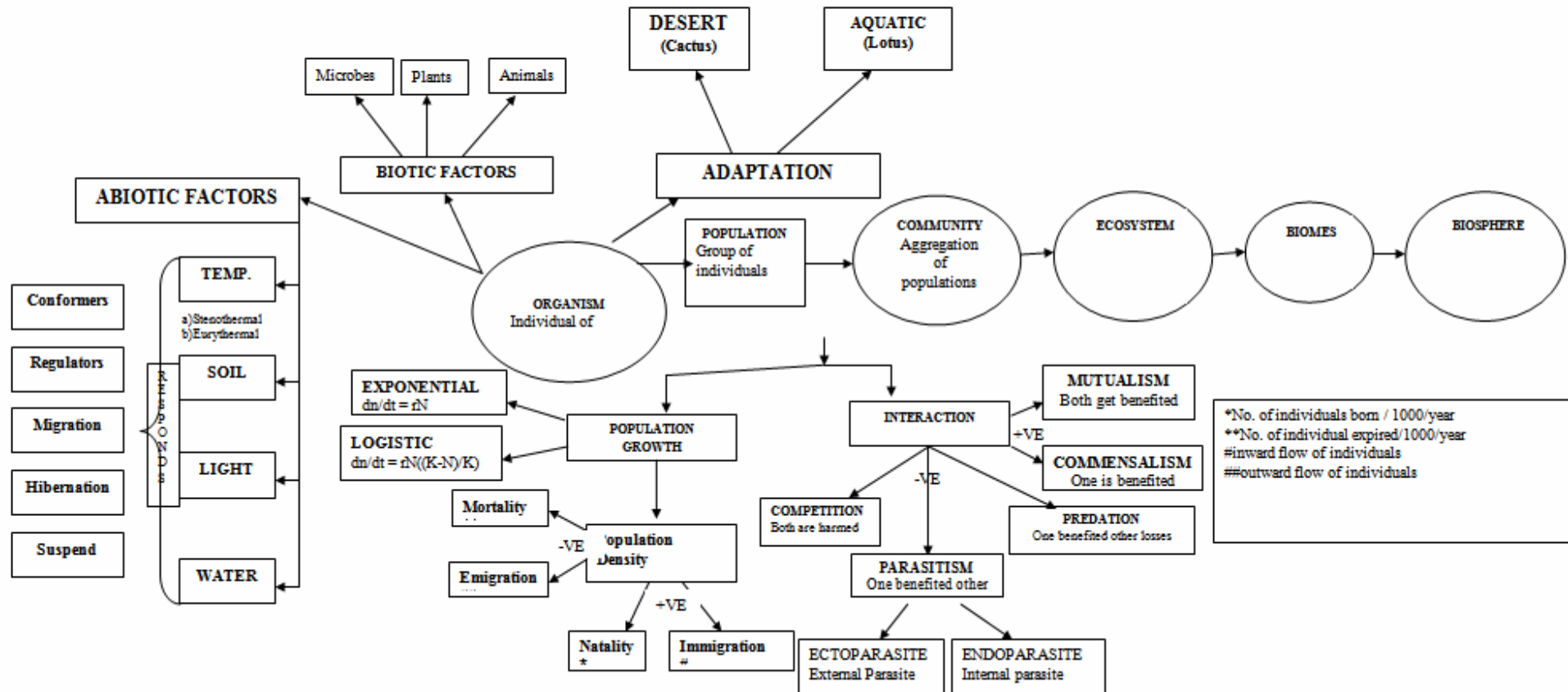


CONCEPT MAP OF THE CHAPTER

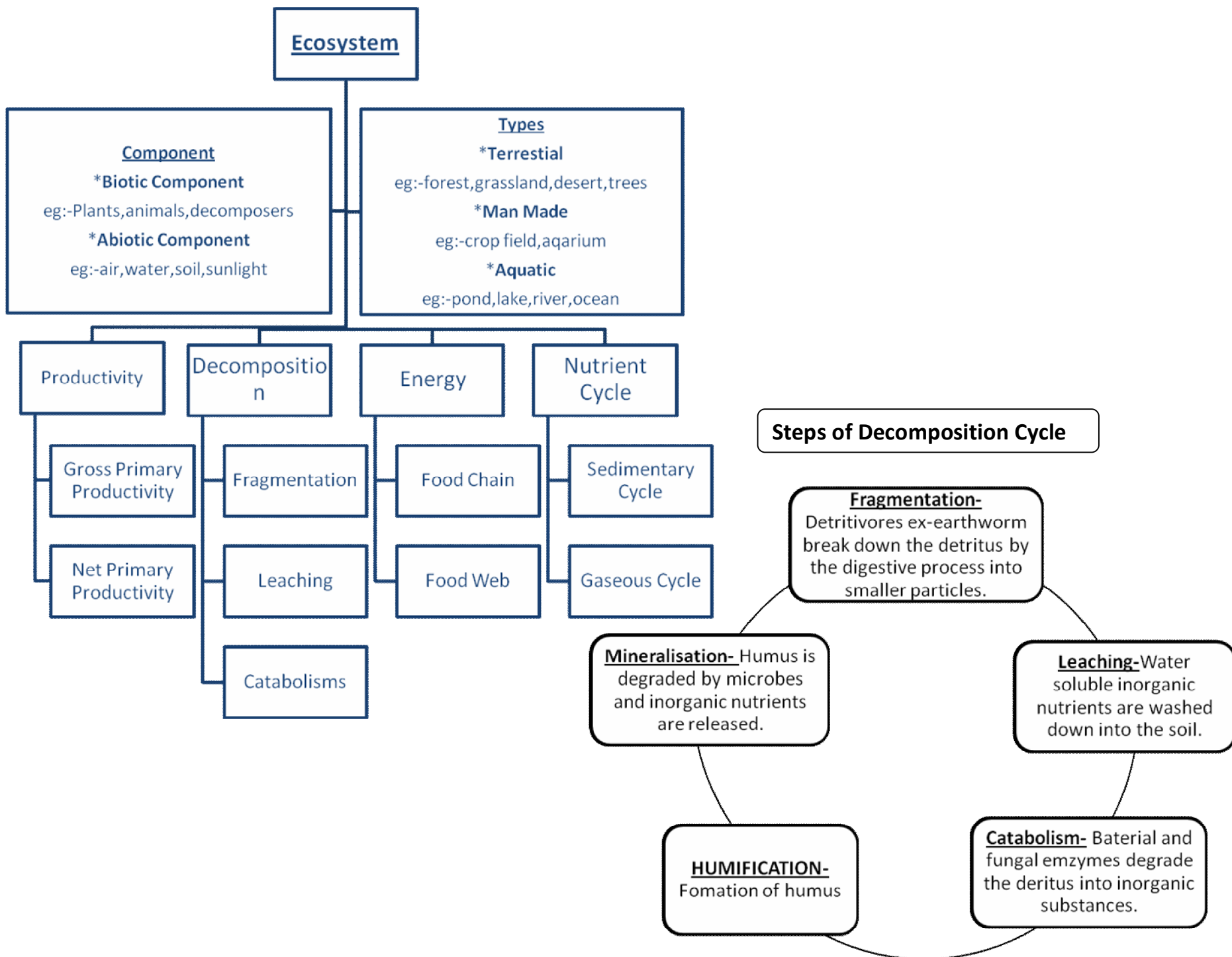


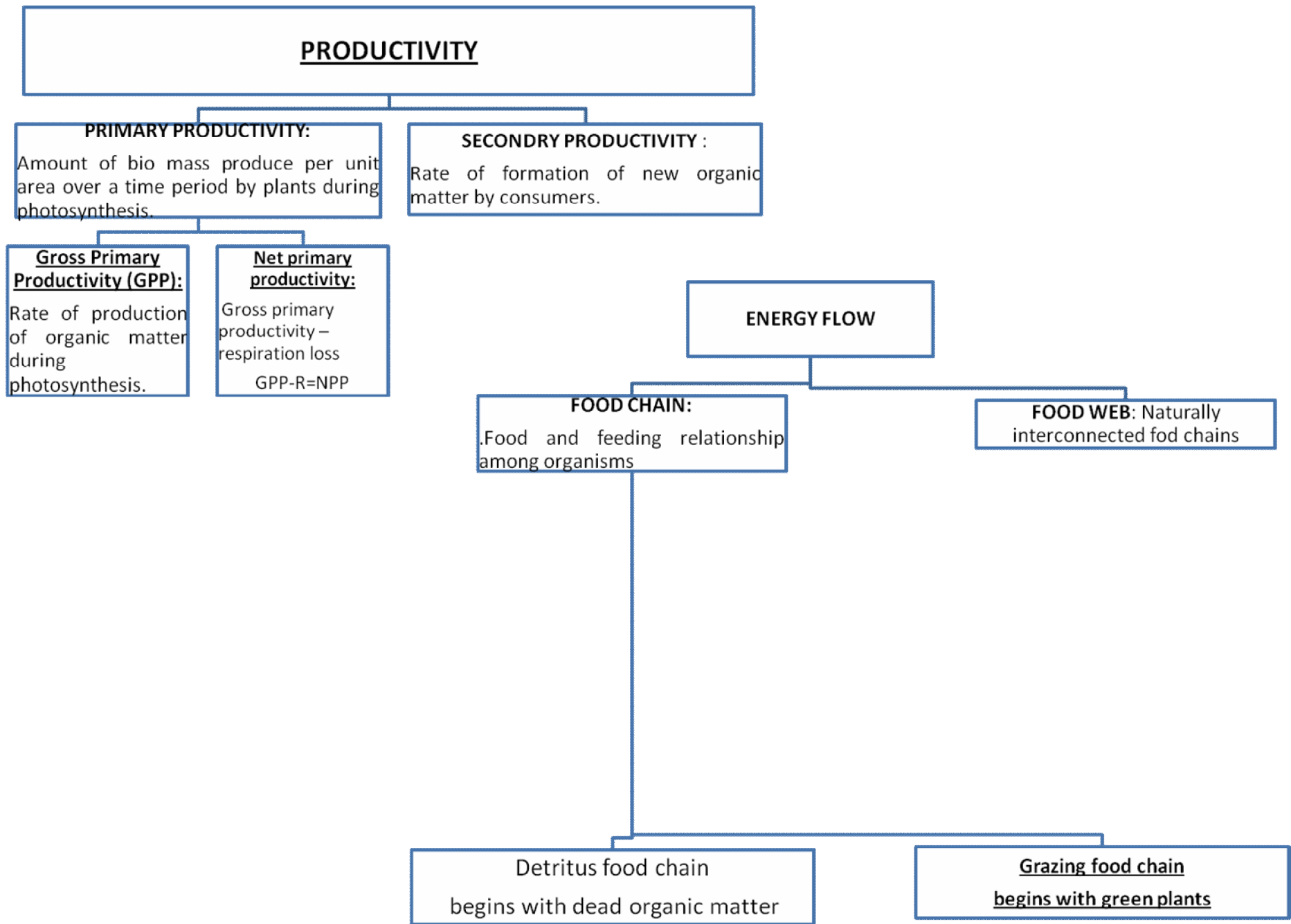
CHAPTER- 13 Organisms and populations

CONCEPT MAP OF THE CHAPTER

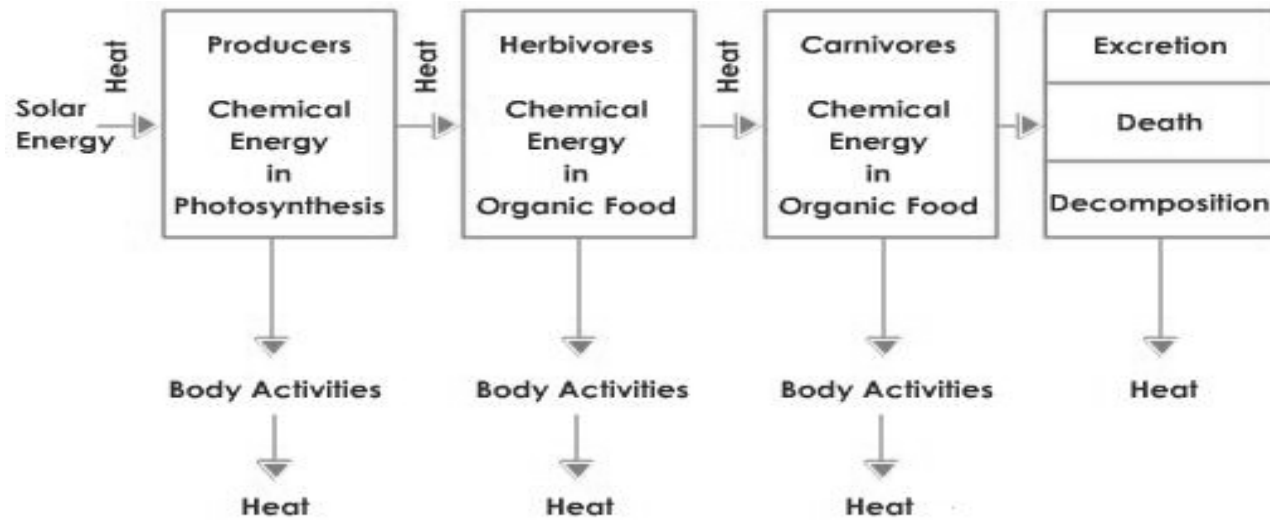


CHAPTER- 14 Ecosystem





ENERGY FLOW THROUGH DIFFERENT TROPIC LEVELS



Energy Flow in an Ecosystem

Energy flow is governed by law of thermodynamics. In each trophic level there is loss of 10 % energy

Ecological succession

GRADUAL AND FAIRLY PREDICTABLE CHANGES IN SPECIES COMPOSITION OF A GIVEN AREA

Primary Succession:

succession on bare land. e.g. bare rock or newly created pond. Takes a very long period of time

Secondary Succession:

occurs in an area where there was vegetation earlier. Takes Less time.

Hydrarch succession in water

Xearch succession on bare rock

TREES (CLIMAX)

SHRUBS

SEDGES

FLOAQTING PLANTS

PHYTOPLANKTON

(PIONEER COMMUNITY)

TREE (CLIMAX)

SHRUBS

HERBS

MOSSES

LICHEN (PIONEER)

NUTRIENT CYCLE

The movement of nutrient elements through the various components of an ecosystem.

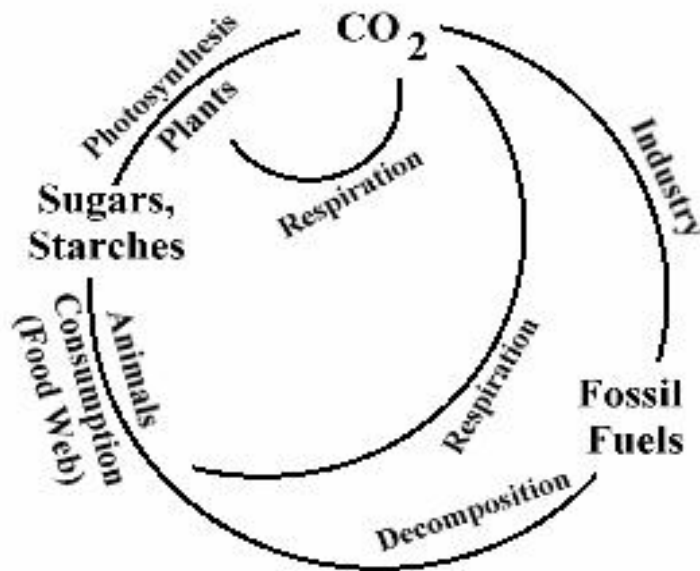
Gaseous:

*Nitrogen, Carbon & Oxygen cycle.
Reservoir in atmosphere.*

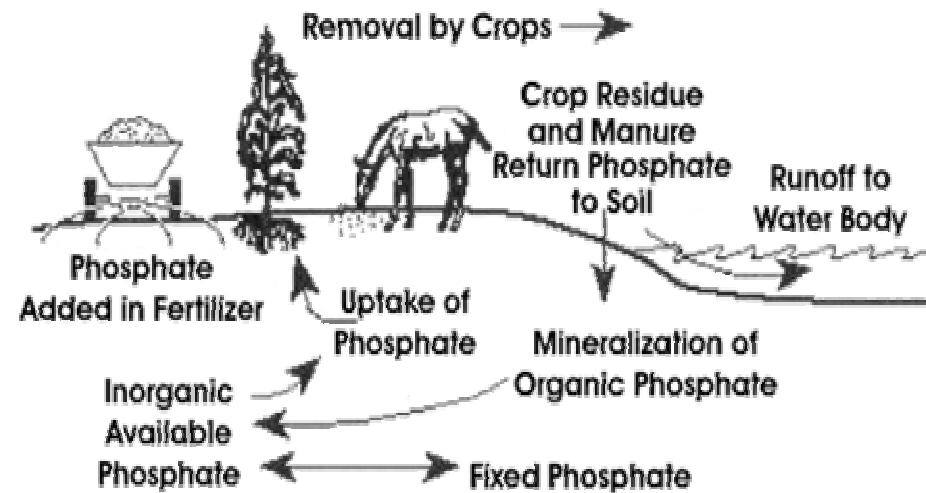
Sedimentary:

Sulphur & Phosphorus

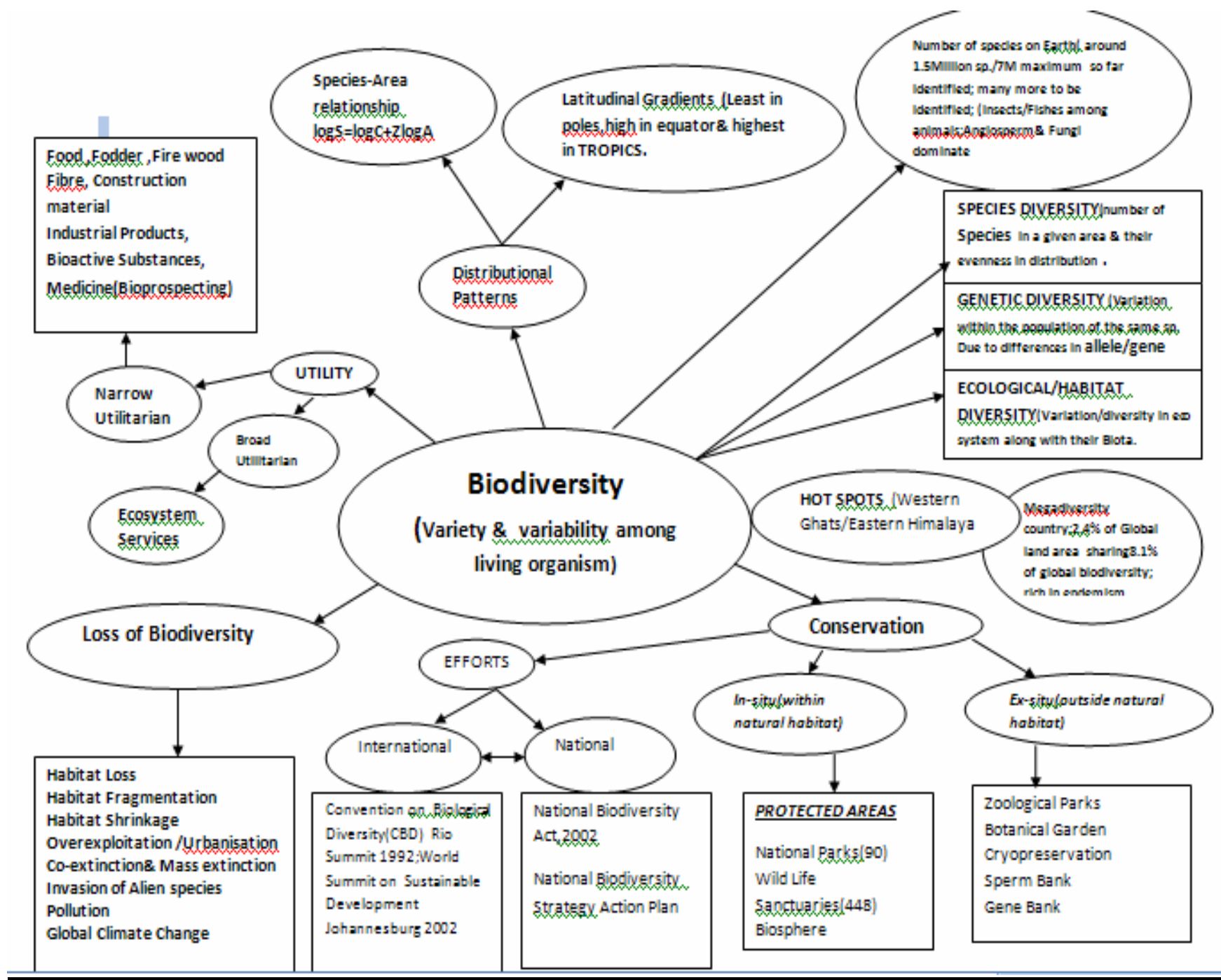
Carbon Cycle



The Phosphorus Cycle



CHAPTER- 15 Biodiversity and conservation



CHAPTER- 16: Environmental Issues

