

Biology

CLASSTIME	Page No
Date	/ /

- ↳ Father of biology → Aristotle
- ↳ Zoologique Philosophical → Lamarck
- ↳ 1st living organism → Cyanobacteria or blue-green algae.
- ↳ Smallest Microbes → Mycoplasma or PPLO
- ↳ PPLO → Pleuro Pneumonia like organism.
- ↳ "Origin of species" was written by Charles Darwin
- ↳ Single Cell → Unicellular → Prokaryotic organism
eg: Amoeba, Plasmodium, Paramecium
- ↳ Multicellular → Eukaryotic

□ Human Brain

- Study of Brain → Encephalogy
↓ Brain ↓ Study
- Brain disorder test → EEG [Electro Encephalo Graph]
Report - Electro Encephalo Graph
- Average weight of Brain → About 1.5 kg
[1450 - 1550 gm]
- Brain is located in the 'skull' & 'protected' by the 'CRANIUM' [on the upper side of head]
- Brain is enclosed by tough 'membranes' called 'MENINGES'
- These membranes are filled by a 'fluid' called 'CSF - Cerebro Spinal Fluid'

- 'Meningitis' (Brain Fever) → due to inflammation in Brain membranes, or Meninges.

- 'Encephalitis' → Disorder of Brain

• SCHEZOPHRENIA

- Symptoms :-
- ① Confused mind
 - ② Repeated actions
 - ③ self talking

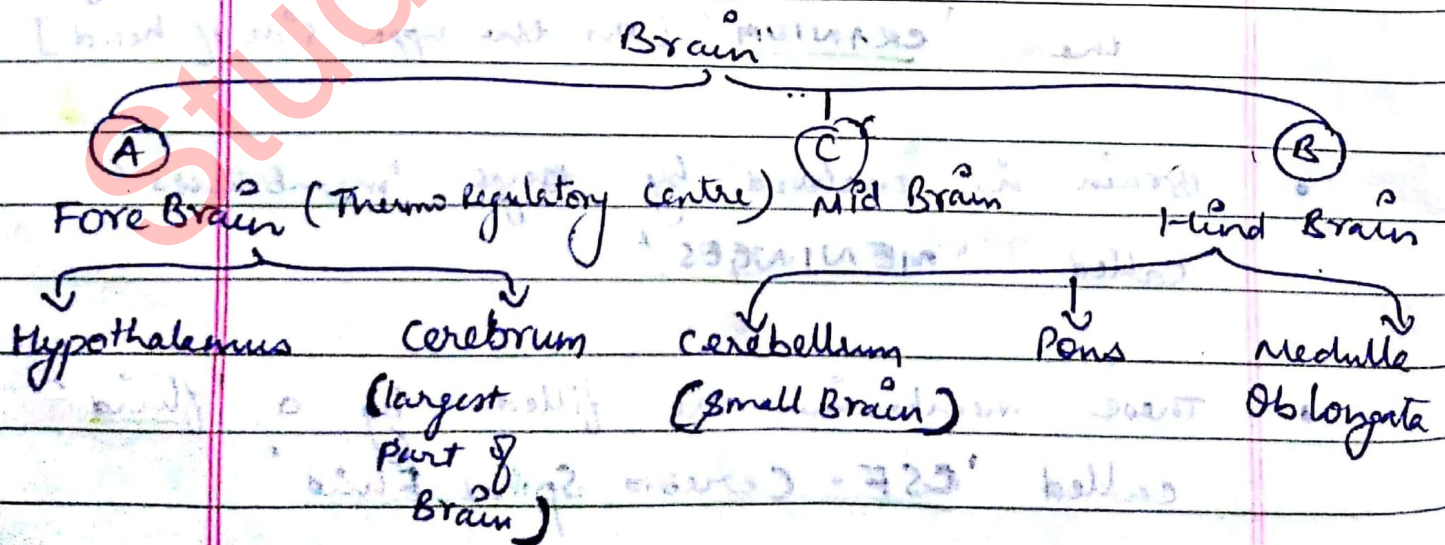
→ Normally caused by excess pressure or tension

• ALZHEIMER'S DISEASE

It is a "chronic neuro degenerative" disease.

Symptom → Short term memory
→ normally due to old age.

PARTS OF THE BRAIN



FUNCTIONS of Brain

(A) FORE BRAIN

(1) Hypothalamus :

① Controls & regulate body temp. & called "Thermo Regulatory Centre"

② It can also control hunger, thirst, anger, fear, excitement, pain.

(2) Cerebrum :

① 'Largest' part of Brain.

② It is the seat of 'Intelligence'.
(Memory, learning, thinking, writing, etc.)

(B) HIND BRAIN ?

(1) Cerebellum :

little Brain
or

① It is also known as 'Small Brain'

② It is for the body balance
(Body posture, body motion, running)

(2) Pons :

① It controls the 'breathing rate'.


(3) Medulla Oblongata :

① It controls swallowing, coughing, vomiting, sneezing, hiccup, urination)

→ All involuntary actions

(c) Mid Brain : It controls the movement of eye lids.

BONES & SKELETON SYSTEM

- The study of Bones is called 'Osteology'
- Total No. of Bones in the body → (206) but at the birth time → (270)
- Longest bone of body → 'Femur' (Thigh Bone)
- Smallest Bone of body → 'Stapes' (ear bone)
- Internal ear has 3 bones {
Malleus
Incus
Stapes 
- Tongue bone → Hyoid bone
- Ribs → 12 pairs = 24
Front bone - 'Sternum'

• cartilage → Boneless, flexible, strong part

• Tendons → join muscles - Bones

• Ligaments → join Bones - Bones

• Shoulder (Pectoral girdle) has 2 bones

Clavical Scapula

• Upper Arm → single Bone - Humerus

• lower Arm → 2 bones

Radius Ulna

• Knee cap → Patella

⇒ **ARTHRITIS** → Inflammation in the bone joint due to lack of fluid (synovial) in old age.

⇒ **GOUT** → deposition of Uric Acid in blood.

• Fluid in the bone joint is called synovial fluid. It provides lubricatⁿ to the joints.

Number of BONES IN Different Parts of BODY

(1) Skull — 29 Bones

* upper head — 08

* Face — 14

* ear — 06

* tongue — 01 (Hyoid)

29

(2) Neck & Vertebrae — 26

(3) Ribs — 24

* Front Bone — 1 (Sternum)

25

(4) Cartilage — Shoulder — 04 (Clavial Scapula)

(5) Upper arm — 02 (Humerus)

(6) Lower arm — 04 [Radius, Ulna]

(7) Wrist — 16 [8+8]

(8) Palm — 10 [5+5]

(9) Fingers — 28 (14+14)

(10) Upper leg — 02 [Femur]

(11) Knee cap — 02 [Patella]

(12) Lower leg — 04 [Tibia Fibula]

(13) Wrist — 02

(14) Ankle — 14

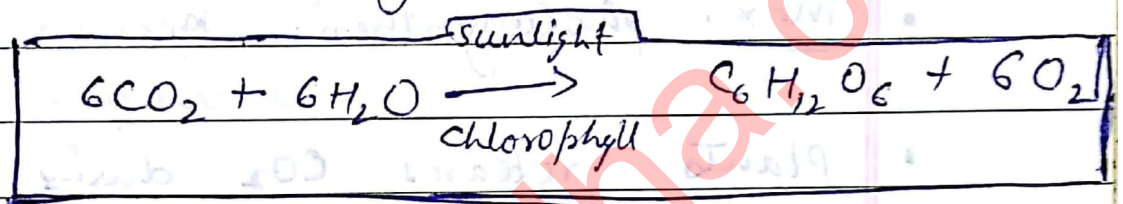
(15) Foot — 10

(16) Toes — 28 [14+14]

206 Bones

PHOTOSYNTHESIS

- Photosynthesis : Green plants have chlorophyll.
In the presence of sunlight.
By using CO_2 & H_2O .
Plants prepare / form their food in
the form of glucose.
& release O_2 gas in Nature.



Main Points :

- Only 1% solar energy is used by green plants. Only 10% is transferred from previous to next trophic level.
- Solar energy is converted into the chemical energy.
- Raw materials for photosynthesis \rightarrow $\text{CO}_2 + \text{H}_2\text{O}$.
- 'Oxygen gas' is released from the 'Water'.
- Chlorophyll act as 'catalyst'.
- Chlorophyll mainly contains 'Magnesium' (Mg).
- Rate of photosynthesis is maximum in 'Red color'.

- If the Intensity of 'light & Heat' increases continuously, First photosynthesis increases \uparrow then stop.

- compensation point : At the morning & evening the rate of photosynthesis & respiration is equal & this is called "compensation point."

- Max. photosynthesis occurs at '2:00pm.'

- Plants releases CO_2 during whole day. But rate of photosynthesis is more in day time this lead to release of more O_2 .

FOOD AND NUTRITION

- Food is a kind of fuel.
- An adult requires approx = 9600 kJ/day
 $\frac{9600}{4.2} \Rightarrow (2285 \text{ Kilo Calorie})$
Provide energy
- Energy is measured in 'Joule' & 'Calorie'

$$1 \text{ Calorie} = 4.2 \text{ J}$$

Food Components

- ① Carbohydrates
- ② Fat
- ③ Protein
- ④ Vitamins
- ⑤ Minerals
- ⑥ Water
- ⑦ Roughage

① Carbohydrates -

→ made up of C, H and O.

→ 1gm carbohydrate gives 17 kJ energy.

→ Mainly contains "glucose molecules".

→ Glucose is known as Instant source of Energy.

Sources of carbohydrates

① Cereals → Wheat, Maize, Rice, etc. ↑ max carbs

② Fruits → Banana, Apple, Pear, etc. ↓ max carbs

↑ best source of carbs

③ vegetables - Potato, Onion, Brinjal, etc.

Banana is the richest source of carbohydrates.

Types of CARBS :-

They are of two types,

Sugar carbohydrates.

Non Sugar Carbohydrate

- Sweet in taste.
- Soluble in water.
- They contain 1 to 10 molecules of glucose.

→ eg: ① Glucose → $C_6H_{12}O_6$
- white powder

② Fructose → $C_6H_{12}O_6$
In fruits.

③ Sucrose → $C_{12}H_{22}O_{11}$
in sugar

④ Lactose → $C_{12}H_{22}O_{11}$
in milk

⑤ Maltose → $C_{12}H_{22}O_{11}$
in Potato & Rice

eg: Prawns

→ they are not sweet in taste.

→ Insoluble in water.

→ They contain 11 to 1000 molecules of glucose.

∴ they are called "Polysaccharide"
many glucose.

→ eg: ① Starch → Potato, rice

② Cellulose → plant products, fruits, vegetables, cotton fibres

③ CHITIN → It is present in -

(i) Outer layer of aquatic animal

eg. Pila (snail), Unio (clam)

(ii) In upper layer of mushroom.

(iii) In the insects - cockroaches, grasshoppers,

wasp, crustaceans.

* In insects, exoskeleton, leg, Antennae, mouth, parts, etc. are made up of chitin.

Q. Which one is the sweetest?

(a) Glucose (b) Fructose

(c) Sucrose (d) Maltose

Riped Grapes are richest source of fructose.

Fructose is natural sugar & found max in "honey".

Q. Starch and cellulose contain groups?

(1) Fat (3) Glucose

(2) Protein (4) Minerals

(2) Fat :-

→ They are made up of C, H, O.

→ 1g Fat gives 37kJ

→ Fat is called "richest source of Energy"

→ Excess fat is deposited in the "Adipose" tissue below the skin.

→ In the camel excess fat is deposited in the hump of reptiles

→ In the crocodiles fat is deposited in the tail & back side.

⇒ Fats are insoluble in water. #
But soluble in :-

(i) Ether - It is used as germicides.

(ii) Alcohol - Beer contains Alcohol % 3-4%.

(iii) Chloroform - It is used as Anesthesia.

(iv) Acetone - nail paint remover. (thinner)

TYPES OF FAT :-

there are two types of fat

unsaturated fat

- (1) they are plant originated
- (2) In liquid form.
eg:- All vegetable oil except "coconut oil".

saturated fat

- (1) Animal ^{solid} Origin
- (2) In liquid form
eg:- ghee, Butter except "fish oil".

Hydrogenation :-

conversion of unsaturated oil into saturated oil
↓
by addition of hydrogen gas in the
→ presence of Nickel catalyst
at 300°C .

Dalda

Excess amount of cholesterol is deposit in the **ARTERIES** and cause for -

- (1) **ARTERIOSCLEROSIS** (hardening of Arteries)
- (2) **Atherosclerosis** (Blockage of Arteries)
- (3) **Heart Attack.**

RANCIDITY : Unpleasant smell from
 fried packed food material due to
 excess exposure in the Sunlight.

③ **Vitamin** -

- discovered by Dr. Funk
- Organic compounds
- Vitamins regulate the "Body Activities"
- Vitamins are classified as

fat soluble vitamins

Vitamin A, D, E, K

water soluble vitamins

Vitamin B-complex
 and Vitamin C

- Deficiency of vitamin → "HYPOVITAMINOSIS"
- Excess of vitamin → "HYPERVITAMINOSIS"

- Excess of Vitamin A can effect to Liver
- Excess of Vitamin D can effect to Kidney.

Fat soluble Vitamins: Vitamin A, D, E and K.

Name	Chemical Name	Deficiency Diseases	Source
Vitamin A	Retinol	(1) Night blindness (2) Xerophthalmia (dryness of cornea & skin)	• Green leafy veg. • Yellow veg. (Pumpkin) • Carrot, Raddish • Mango, Papaya • Milk, egg, etc.
Vitamin D	Calciferol → Keeps Healthy bones & teeth → or Sunshine Vitamin	(1) Rickets, (2) Osteomalacia (child) ↓ (adult) softening of Bones	• Green leafy veg. • Fruits/veg. • Cod Liver oil (fish oil)

Name	Chemical Name	Deficiency Disease	Sources
Vitamin E ↳ keeps healthy skin & Hair and called Beauty Vitamin	Tocopherol	STERILITY (Weak Reproductive sex cells)	<ul style="list-style-type: none"> • Green leaf veg. • Cotton seed oil • Almond oil • Dry fruits, etc.
Vitamin K ↳ Help in the blood clotting.	Phylloquinone	<ol style="list-style-type: none"> ① Failed Blood-clotting ② Haemorrhage ③ Anaemia 	<ul style="list-style-type: none"> • Green leaf veg. • Fruits • leaves of "Alfalfa"

Water soluble vitamin : Vitamin B-complex & Vit C

Name	Chemical Name	Deficiency Disease	Sources
[B-complex]			
B ₁	Thiamine	Beri-Beri	<ul style="list-style-type: none"> • Yeast • unpolished rice & pulses.
B ₂	Riboflavin or lactoflavin (milk vitamin) or Vitamin G	Ariboflavinosis	<ul style="list-style-type: none"> • Milk & milk products.
B ₅	(Pantothenic Acid)	Fatigue	<ul style="list-style-type: none"> • gram, soybean, egg, etc.
B ₃	Niacin or Nicotinic Acid or 3D vitamin	Pellagra* ↳ Black patches on skin, ③ D - Diarrhoea D - Dementia D - Dermatitis	<ul style="list-style-type: none"> • sprouted pulses, Egg, gram, paneer. All protein sources
B ₉	Folic Acid or Vitamin M	Anaemia (Macrocytic Anaemia) ↓ size of RBC increases	<ul style="list-style-type: none"> • Green leaf veg. • Fruits, Apple, grains, pulses.

* • Pellagra disease is very common in who totally depend on Maize diet.

Contains Cobalt

B12 Cyanocobalamin Anaemia
(Pernicius)
[Injured RBC]

• Fish, egg, Meat,
etc. Spinach

C Ascorbic Acid Scurvy

• All citrus fruits
veg. like Amla,
Lemon, Orange.

• Role of Vitamin C :-

(1) Vitamin C maintain immune power.

(2) Vitamin C prevent from cough & cold.

(3) Help in wound healing.

(4) Proteins

→ Proteins are made up of C, H, O & N.
but 'N' is the main element.

→ Sometimes protein contains Sulphur (S), Phosphorus (P) and Iron (Fe)

→ Protein contains "Amino Acid groups"

→ "Protein" is the "most essential" food components.

→ Animal protein is called "1st class protein" coz it contains max. essential amino acid.

Sources of Protein :-

- (1) Fish
- (2) Soybean [Glycine max] \rightarrow max protein
- (3) Egg - Albumin (white)
- (4) Cheese
- (5) Meat, gram, milk, etc.

Some Importance proteins & their functions :-

- (1) Digestive Protein / Enzymatic Protein
Protein act as Enzymes & help in digestion -

eg. - Pepsin & Trypsin

- (2) Transportary Protein
It transport O_2 & CO_2

eg. - Haemoglobin (Hb)

$Hb + O_2 \rightarrow$ Oxyhaemoglobin (Pure form of Blood)

$Hb + CO_2 \rightarrow$ Carboxy haemoglobin [Impure form of Blood]

- (3) Hormonal Protein
Act as Hormones

eg. :- Insulin

- (4) Exoskeletal Protein

They are found in nails, hairs & skin.

eg. Keratin

(5) Contractile Protein

Help in the Muscles Contraction

eg. Actin & Myosin

(6) Defensive Protein

eg. gammaglobulin

DIGESTIVE SYSTEM

Digestion
↓ ↓
Break Absorb

- Digestion is the "Breakdown of complex food molecules into simpler food so that they are absorbed by the body".

	<u>Complex food</u>	<u>In the presence of Enzymes</u>	<u>Simple food</u>
(1)	Carbohydrates Wheat, Cereals, fruits, veg.	→	"glucose"
(2)	Protein	-	"amino acid"
(3)	Fat	-	"fatty acid & Glycerol"

- Enzymes : They are chemical compounds that help in digestion

→ Enzymes act as Bio-catalyst.

→ Chemically - All enzymes are protein.
But All proteins are not Enzymes.

→ Enzymes are secreted from Digestive Glands

- Cellulose is not digested by the humans.

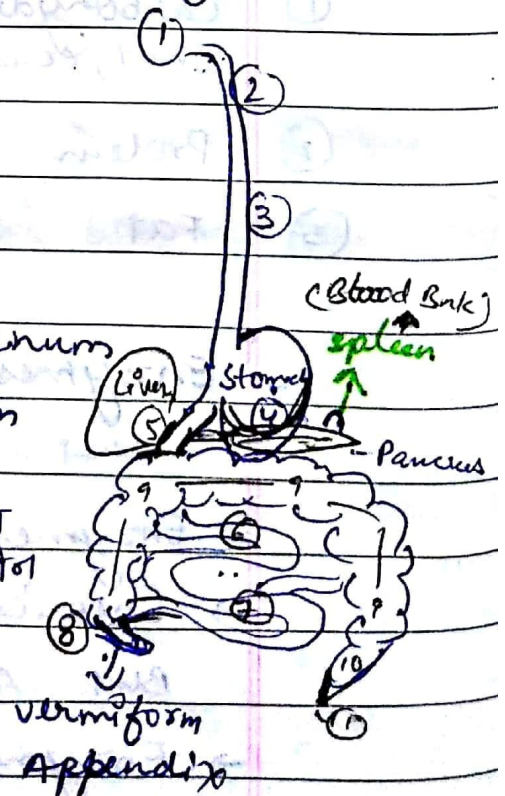
Digestive Glands - 5 types

- ① Salivary Glands - Mouth
- ② Gastric Glands - Stomach
- ③ Intestinal Glands - Small Intestine
- ④ Liver
- ⑤ Pancreas

Alimentary Canal of Human Being

- It is app. 32 feet or 9 meter various parts of the Alimentary canal

- ① Mouth (Buccal cavity)
- ② Pharynx
- ③ Oesophagus
- ④ Stomach
- ⑤ Small Intestine
 - ⑤ Duodenum
 - ⑥ Jejunum
 - ⑦ Ileum
- ⑧ Large Intestine
 - ⑧ Caecum
 - ⑨ Colon
 - ⑩ Rectum
- ⑪ Anus



Digestion Process and Enzymes

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→ Digestion in mouth & Enzymes

- mouth has Salivary Glands

- (1) Parotid glands
 - (2) Sub mandibular glands (ear)
 - (3) Sub-lingual gland. (tongue)
- } They secrete saliva

- Approx. 1.5 litre saliva / day. is secreted.

- saliva contains enzymes → salivary Amylase
or Ptylin.

This for the digestion of "Starch."

→ Digestion in Stomach & Enzymes

- stomach has gastric glands. they secrete "Gastric juice".

- Gastric juice contains :- (1) HCL

(2) Mucin

(3) Enzymes → Pepsin

→ Rennin

→ Gastric Lipase

(1) HCL

- It provide acidic medium

- Kills germs

(2) Mucin

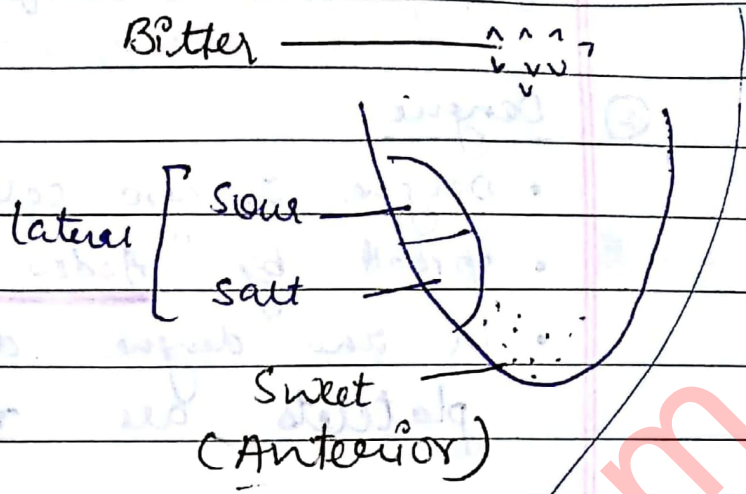
- Provide lubrication

(3) Enzymes

(i) Pepsin : Digest protein into amino acid

(ii) Rennin : convert Caseinogen into Casein
(milk protein) whey

#

TONGUEBitter 

lateral [Sour
salt
Sweet
(Anterior)

COMMON HUMAN DISEASES

- Generally caused by MICRO-ORGANISMS
 - eg (1) Virus (2) Bacteria (3) Protozoa (4) Fungi

- VIRAL DISEASES

- | | | |
|----------------------------------|------------------|-------------------------|
| (1) Hepatitis | (5) Bird Flu | (9) Small Pox |
| (2) Dengue | (6) Swine Flu | (10) Chicken Pox |
| (3) Eye Flu
Plague | (7) SARS | (11) Measles |
| (4) Polio | (8) Ebola | (12) Mumps |
| (13) AIDS | (16) Herpes | (14) Eye Flu |
| (14) Rabies | (17) Common cold | |
| (15) Chicken pox | ed caught | |

(1) Hepatitis [Severe Jaundice]

Hepa (Liver) itis (death)

Normally Hepatitis A & C spread by contaminated food and water. But Hepatitis B spread by

(i) Infected blood transfusion &

(ii) By sexual contact.

Hepatitis B is a fatal disease.

(2) Dengue

- Dengue is also called - "Break bone fever"
- spread by "Aedes aegypti Mosquitoes"
- In the dengue disease no. of Blood platelets are reduced ↓.

(3) Eye Flu

- Most effected part is "conjunctiva" & it is called "conjunctivitis"
- It is a infectious and communicable diseases.

(4) Polio

- Also called Poliomyelitis or Infantile Paralysis
- Polio spread by polluted food and water.
- Polio disease & 1st vaccine was given by Johans Salk.
- & called Salk disease.
- OPV - Oral Polio Vaccine - given by Albert Sabien

(5) Bird Flu

- Also called "Avian Flu" [Aves = Bird]
- Virus name - H₅N₁
- Vaccine - "Tamiflu"

(6) Swine Flu

- Also called - "Pig flu"
- Virus - H₁N₁
- Vaccine - "Tamiflu"

(7) SARS - Severe Acute Respiratory Syndrome

- Virus - Corona Virus

(8) Ebola

- Also known as "Ebola Haemorrhagic Disease"
EVD - "Ebola Viral Diseases"

(9) Small Pox

- Permanent spot on face
- It is totally eradicated disease.
- 1st vaccine given by "Edward Jenner" & he is known as "Father of Vaccination"
- "vaccine" term taken from "cow".

(10) Chicken Pox

- Temporary red spots on the face & body.

(11) Measles

- Temporary red spots on face & body in children
- cough, cold & fever & symptoms.

(12) Mumps

- Swelling of parotid gland near the ear.

MMR - vaccine prevent

M - mumps
M - Measles
R - Rubella

(13) AIDS : Acquired Immuno Deficiency Syndrome.

- virus name → HIV = Human Immuno Deficiency Virus
- Most affected part → Immune power.

- AIDS virus discovered by - Robert Gallo (USA)
- Test - (1) ELISA - Enzyme Linked Immuno Sorbent Assay.
- (2) Western Blot test
- 1st Dec is celebrated as World AIDS Day.

(14) Rabies

- Rabies spread by → Rabid Animals
- Rabies Vaccine / Treatment given by Louis Pasteur
 & is called Pasteur treatment → 0-3-7-14-28
24 hr. days
- Rabies is called "Hydrophobia"
- Rabies is a fatal disease.

(15) Chickengpox

- Inflammation in bone joints.
- spread by Culex mosquitoes.

(16) Herpes

- Skin blister, severe pain in the body.

(17) Common cold & cough

- caused by virus

□ BACTERIAL DISEASES

- | | | |
|---------------|---------------------|-------------|
| (1) Pneumonia | (6) Plague | (9) Tetanus |
| (2) T. B. | (7) Diphtheria | (10) STDs |
| (3) Cholera | (8) Pertussis | |
| (4) Typhoid | (w/ whooping cough) | |
| (5) Leprosy | | |

① Pneumonia

- Inflammation in lungs
- caused by Bacteria - Diplococcus pneumoniae.

② T.B - Tuberculosis Bacillus

- Discovered by -> "Robert Koch"
- Bacteria name -> "Mycobacterium Tuberculosis"
- Vaccine -> BCG [Bacillus Calmette, Guérin]
- It is given at the Birth time
- Test -> Montoux test
- DOTS -> Directly Observation Treatment of Short course.
- 24th March - World T.B. Day

③ Cholera

- Discovered by "Robert Koch" called Koch Disease
- Bacteria Name - Vibrio cholerae
- spread by Polluted food & water.
- It is spread by common house fly.

④ Typhoid

- Also called - "Intestinal fever"
- Bacteria Name - Salmonella typhi
- Test - Vidal Test
- Vaccine - (I) Typhonal - oral vaccine
(II) TAB

⑤ Leprosy

- discovered by - "Hansen" & called Hansen's diseases.

PROTOZOAN DISEASES

- (1) Malaria
- (2) Amoebiasis
- (3) Sleeping sickness
- (4) Kala-Azar
- (5) Pythoea

(1) Malaria

- Discovered by "Ronald Ross" (Malaria spread by the mosquitoes)
He also received Noble Prize for this.
- Caused by - Plasmodium
- Spread by Female Anopheles Mosquitoes
- Most effected parts are liver & spleen (Blood Banks)
- Drug → Quinine (obtained from bark of CINCHONA tree)
(Kinchona)

(2) Amoebiasis

- Caused by - Ent amoeba histolytica
- Spread by polluted food & water.

(3) Sleeping Sickness

- Also called "African Disease"
- Caused by - "Trypanosoma gambiense"
- Spread by - "Tse-Tse fly."

(4) Kala Azar

- Caused by - "Leishmania donovani"
- Spread by - sand fly.

(5)

Pyorrhoea

- caused by - Ent amoeba ^{gums} 'gingivalis'.
- Bad Breath
- communicable.

□ FUNGAL DISEASES

① Ringworm

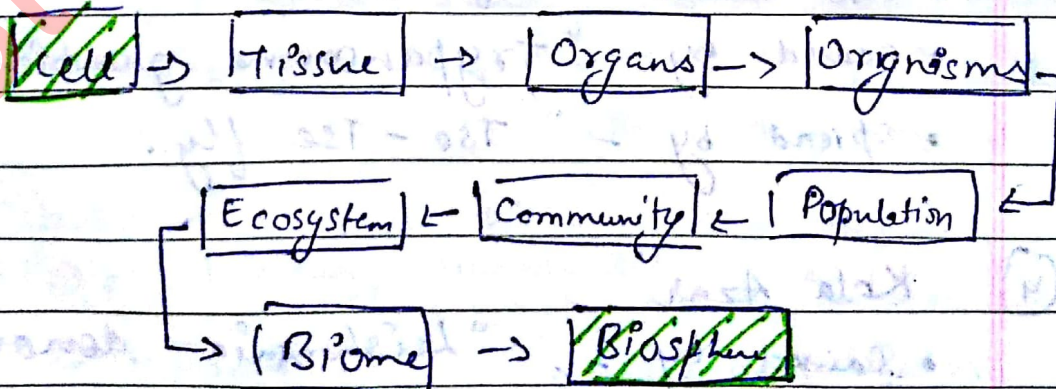
* ② Athlete foot disease

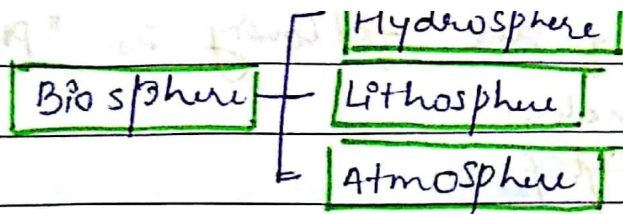
□ ANTIBIOTICS

- They are chemical compounds obtained from bacteria and Fungi
- 1st antibiotic → "Penicillin"
- Penicillin discovered by "Alexander Fleming"
- "Penicilline is obtained from "penicillium notatum"

1st Sep, 15

CELL

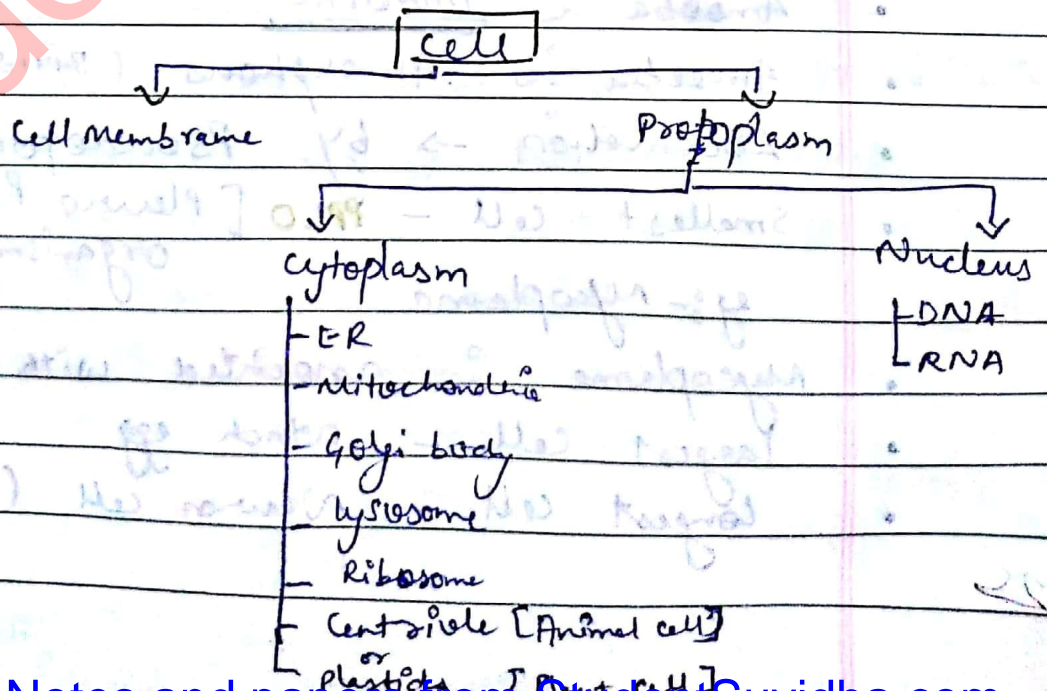
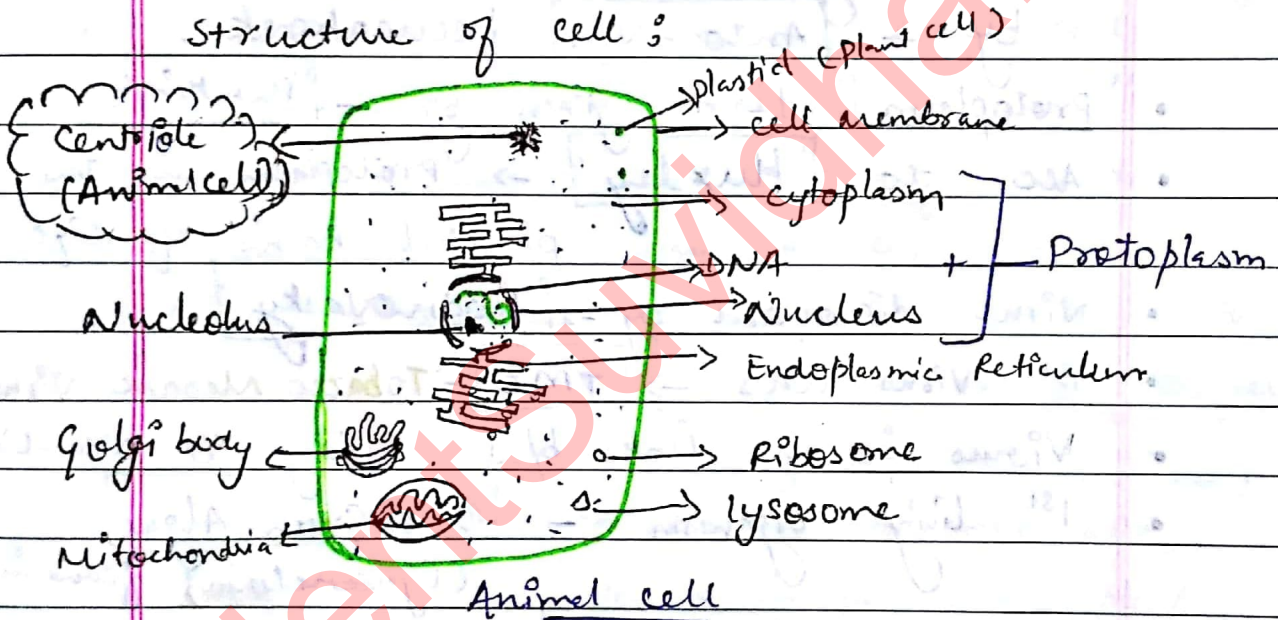




Biome : Biome is the natural Ecological grouping of Plants & Animal.

cell :
 • cell discovered by → 'Robert Hook' in '1665'
 • Robert Hook examine the "cork cell". EP chamber of Honey comb.

Structure of cell :



Q. Which of the following is "physical basis of life" Acc. to Huxley

- (a) Nucleus
- (b) Cytoplasm
- (c) DNA
- (d) Protoplasm

Main Points

- Study of cell - CYTOLOGY
- Study of tissue - HISTOLOGY
- Free living cells - (Bacterial cell) discovered by - Anto-van Leeuwenhoek.
- "Protoplasm" term given by - "Purkinje"
- Acc. to "Huxley" → Protoplasm is the physical basis of life.
- Virus discovered by → "Iwanovsky"
- 1st virus was → TMC [- Tobacco Mosaic Virus]
- Virus is a link b/w living & non-living.
- 1st living organism - Blue Green Algae (Cyanobacteria) found in ocean
- Amoeba is "Immortal"
- Amoeba is Amorphous (अनियमित आकार)
- Locomotion → by Pseudopodia
- Smallest cell - PPLO [Pleuro Pneumonia like organism]
eg:- Mycoplasma
- Mycoplasma is associated with → Lungs Infection.
- Largest cell - ostrich egg
- Longest cell - Neuron cell (length 1 meter)

- Mitochondria → stores & release Energy in the form of "ATP".
- " called → (i) Power house of cell
(ii) ATP mills / energy mill
- Mitochondria contains its own DNA
- Lysosome called (i) Suicidal bag or Death Bag.
(ii) Atom Bomb of cell
- Plastids are present only in plant cells.
Main role → Photosynthesis.
also called "kitchen of the cell" or "Food factory of cell"
- Centriole → Present only in animal cell
Main function → help in cell division
- Nucleus → called "control room of cell" or "brain of the cell"
- Ribosomes → main role is "protein synthesis". So called "Protein factory" or "engine of the cell".
- Genetic Materials — DNA (Deoxyribonucleic acid)
— RNA (Ribonucleic Acid)
- DNA :- (i) Mostly found in the animals, plants, bacteria.
(ii) Double Helical Model or [Double Helix Model] - given by "Watson & Crick"
→ They also received Nobel Prize for this.
(iii) DNA mainly contains -
 - (1) Adenine
 - (2) Guanine
 - (3) Cytosine
 - (4) Thymine

- RND - Mostly found in virus called - "Retro Virus"
↳ "Uracil" is present in place of Thiamine.

(1) Adenine

(2) Guanine

(3) Cytosine

(4) Uracil

- Binomial Nomenclature given by - "Linnaeus"

- Acc. to "Whittaker" - All things classified into 5 kingdom.

(1) Monera - (Bacteria)

(2) Protista - Protozoa

(3) Fungi - yeast

(4) Plantae - plants

(5) Animalia - Animals

RESPIRATORY SYSTEM

- "Breathing" is a Mechanical process which involves the exchange of gases by Nostril

- "Respiration" is a chemical process in which food is oxidised by with raising of energy in the form of ATP.



- Breathing Rate :

(i) Normal Breathing rate in Adult/Man >

(A) 72 times

(C) 36 times

(B) 54 times

(D) 18 times