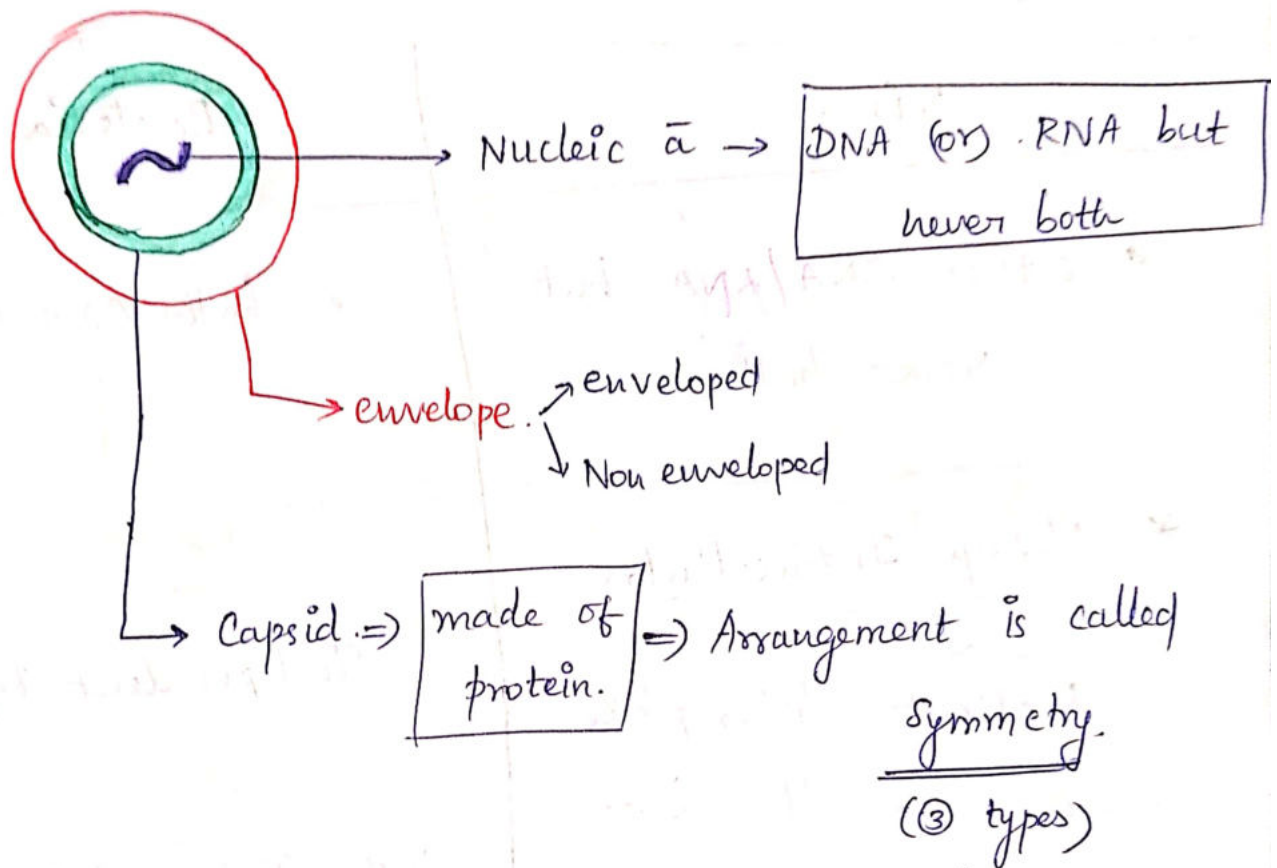


Virus:

* virus is a NUCLEOCAPSID. → Nucleic acid covered by a capsid.



Icosahedral



Complex



Helical



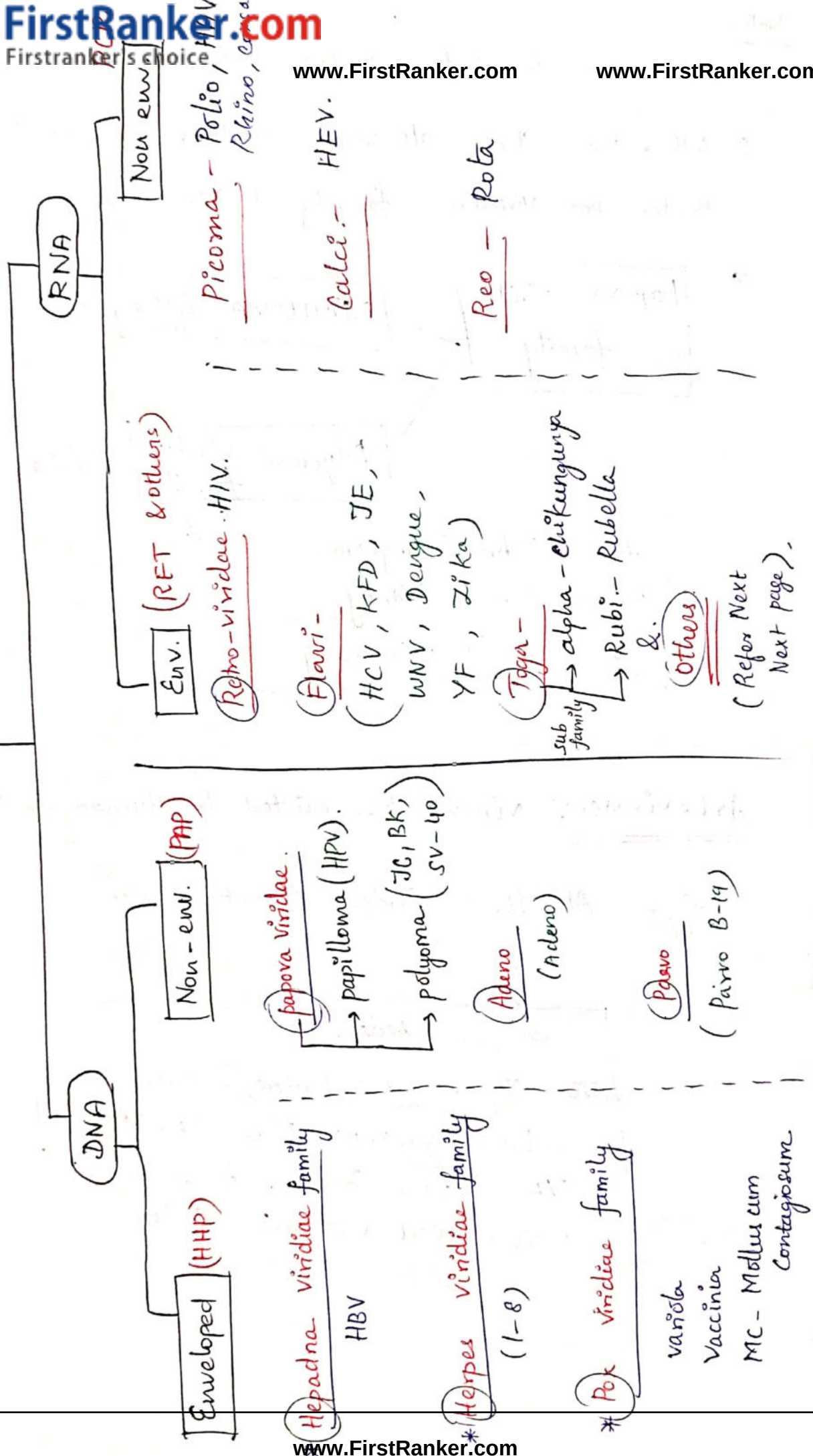
→ infectious capsid
(protein)

→ prion.

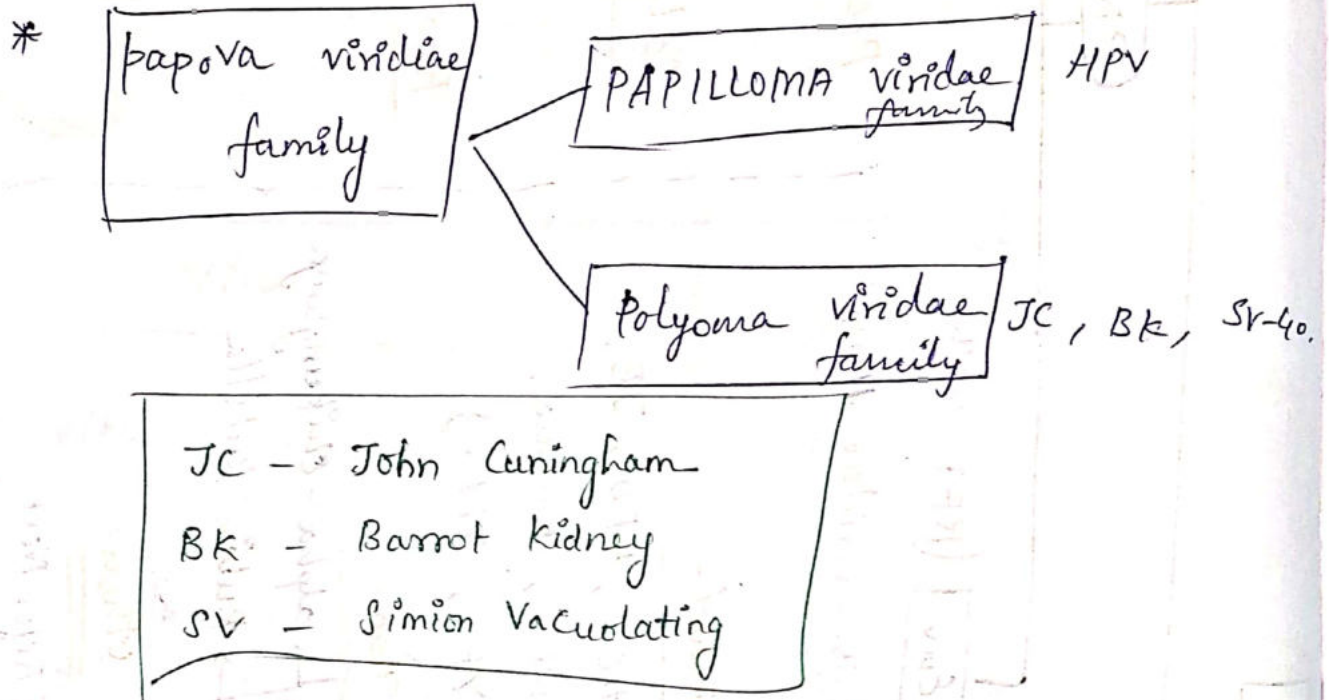
Virus	Bacteria
* either DNA/RNA but Never both	* both DNA & RNA.
* Always Intracellular. ↓ Replicatn takes place inside the cell bcoz It lacks <u>enzymes &</u> <u>proteins necessary</u> <u>for replication.</u>	Independent Replicatn. & Both Intea/Extracellular
Complex Viral Replicatn	Simple Binary fission
Virus can't be cultivated on dead cells. / Culture media	

VIRUS

CLASSIFICATION:



* Other than that all virus ending in pox comes under pox viridae family (DNA-env.).



Arboviruses: viruses transmitted to Human via VECTOR

eg: All flavi-viridae except HCV.

Dengue - Aedes.

JE - Japanese Encephalitic^{virus} - Culex.

KFD - Kyasanur Forest DS^{vir} - Tick.

YF - Yellow Fever^{vir} - Aedes.

WNV - West Nile virus - Culex.

Zika - Aedes

- RNA - Env. others:
- (i) ortho myxo - viridae - Influenza
 - (ii) para myxo - " - parainfluenza, RSV. (Res. syncytial)
 - (iii) Rhabdo " - Rabies
 - (iv) Corona " - Corona
 - (v) Arena " - Lassa fever virus & LCM Virus.
 - (vi) Bunya " - Hanta, CCF.
 - (vii) Filo " - Ebola, Marburg.
 - (viii) Delta " - HDV.

LCM - Lymphocytic Choro Meningitis Virus.

CCF - Crimean Congo Fever Virus.

Note:

Hepatitis - viruses:

- 1) HAV - Hepatitis - A $\Rightarrow$ RNA - Non Env. (Picorna Viridae family)
- 2) HBV - " - B $\Rightarrow$ DNA - Env (Hepadna " ")
- 3) HCV - " - C $\Rightarrow$ RNA - Env. (Flavi " ")
- 4) HDV - " - D $\Rightarrow$ RNA - Env (Delta " ")
- 5) HEV - " - E $\Rightarrow$ RNA - Non Env. (Calci " ")

Mnemonics:

(i) DNA: (6)

* Env → HHP

* Non Env. → PAP

RNA

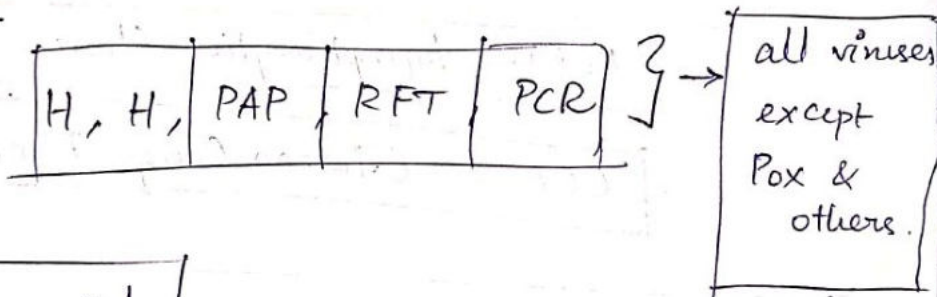
* Env → RFT & others

* Non Env → PCR

* Note: In case of Envelope, its easy to Remember
Non Env. Viruses. → Total (6) (DNA-3 ⊕ RNA-3).

(ii) For Symmetry:

Icosa Hedral (11)



Complex (1): Pox. only

Helical (8): others → orthomyxo, paramyxo, Rhabdo, Corona, Arena, Bunya, Filo, Delta.

(iii) Linear Nucleic acid: Usually Nucleic acid (RNA/DNA) is LINEAR but in few its Linear

Mnemonic:

A
↓
Arena

H
↓
HBV.

B
↓
Bunya.

H
↓
HPV.

viruses.

only these
(4) have
Linear Nucleic acid

Usually Nucleic acid is

NON SEGMENTED

for viruses/families it is segmented i.e. each segment of N.A. codes for a polypeptide.

Mnemonic



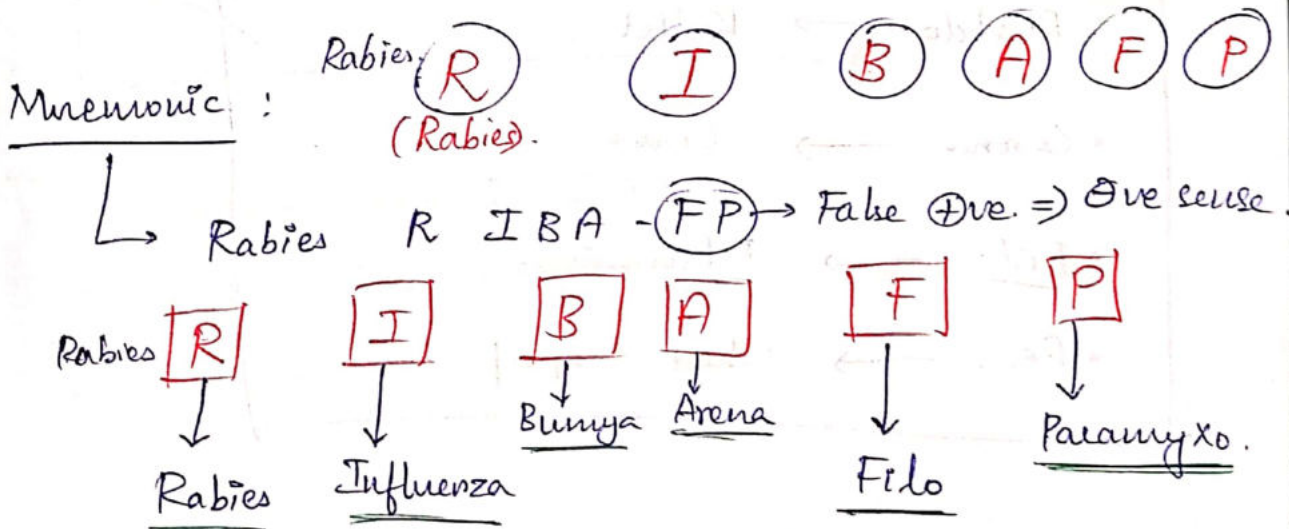
Segments 11 8 3 2

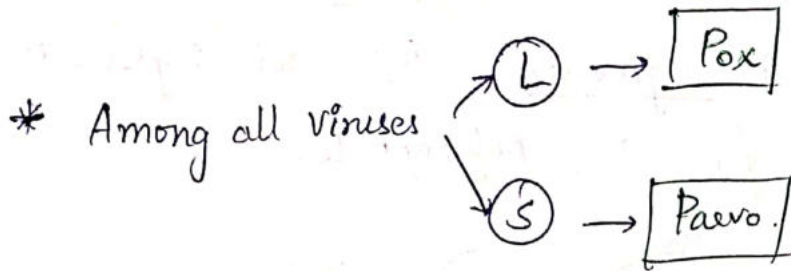
Descending order →

v) One sense strand Nucleic acid

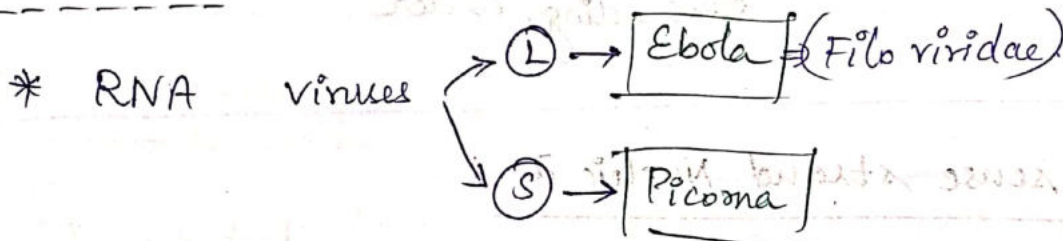
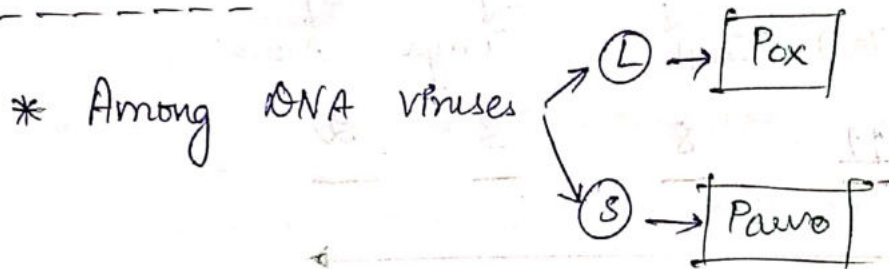
* In case of DNA, one strand is ⊕ & other is ⊖ so no problem

* But in RNA, it may ⊕ / ⊖ (single strand).
few viruses have ⊕ sense RNA, few have ⊖ sense RNA:





Plant pathogen
↓
[Pitho] virus
(largest)



(viii) Shapes of viruses:

- Pox. → Brick shaped
- Adeno → Space vehicle
- Rhabdo → Bullet
- Corona → Crown
- Filo → Filamentous
- Reo. → Wheel shaped