

Part 5 AIDS



Homosexuals*

Syndrome: group of symptoms'

AIDS

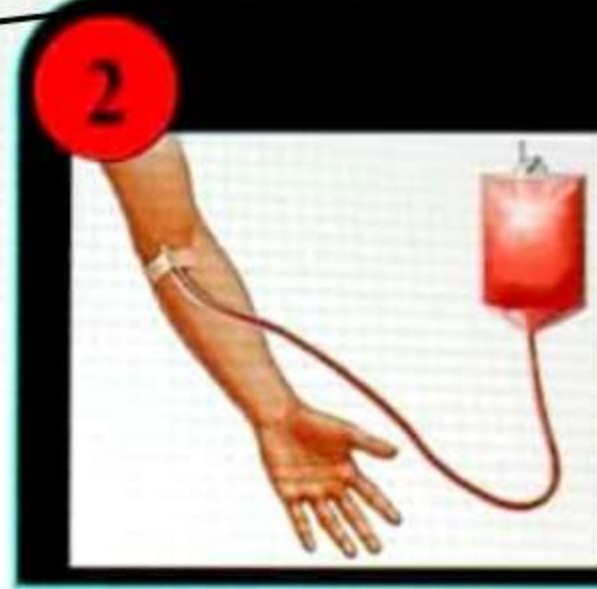
Transmission

fluid exchange Ant.

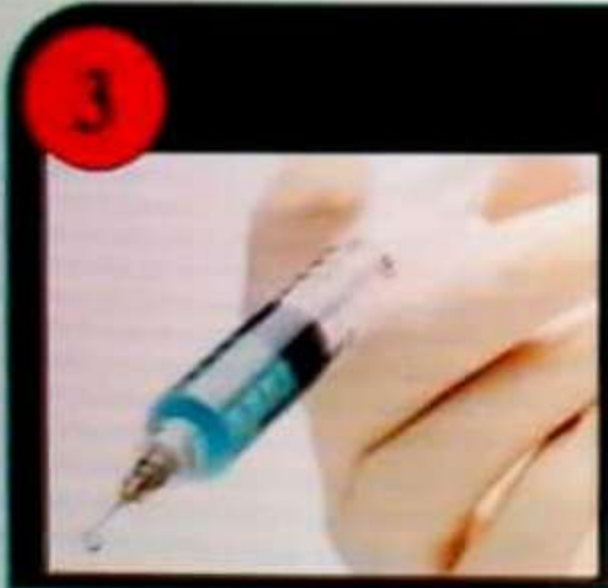
Condom (except this)



Sexual contact with infected person.



Transfusion of contaminated blood & blood products.



Sharing of infected needles

Drug addict.



From infected mother to her child through placenta.

AIDS

Transmission

High risk people of getting HIV

1



→ Prostitution
Individuals with multiple sexual partners.

2



Individuals who require repeated blood transfusion.

3



Drug addicts who take drugs intravenously.

4



Through Placenta
Children born to an HIV infected mother.

AIDS

Transmission

*Dialysis would be at very low risk



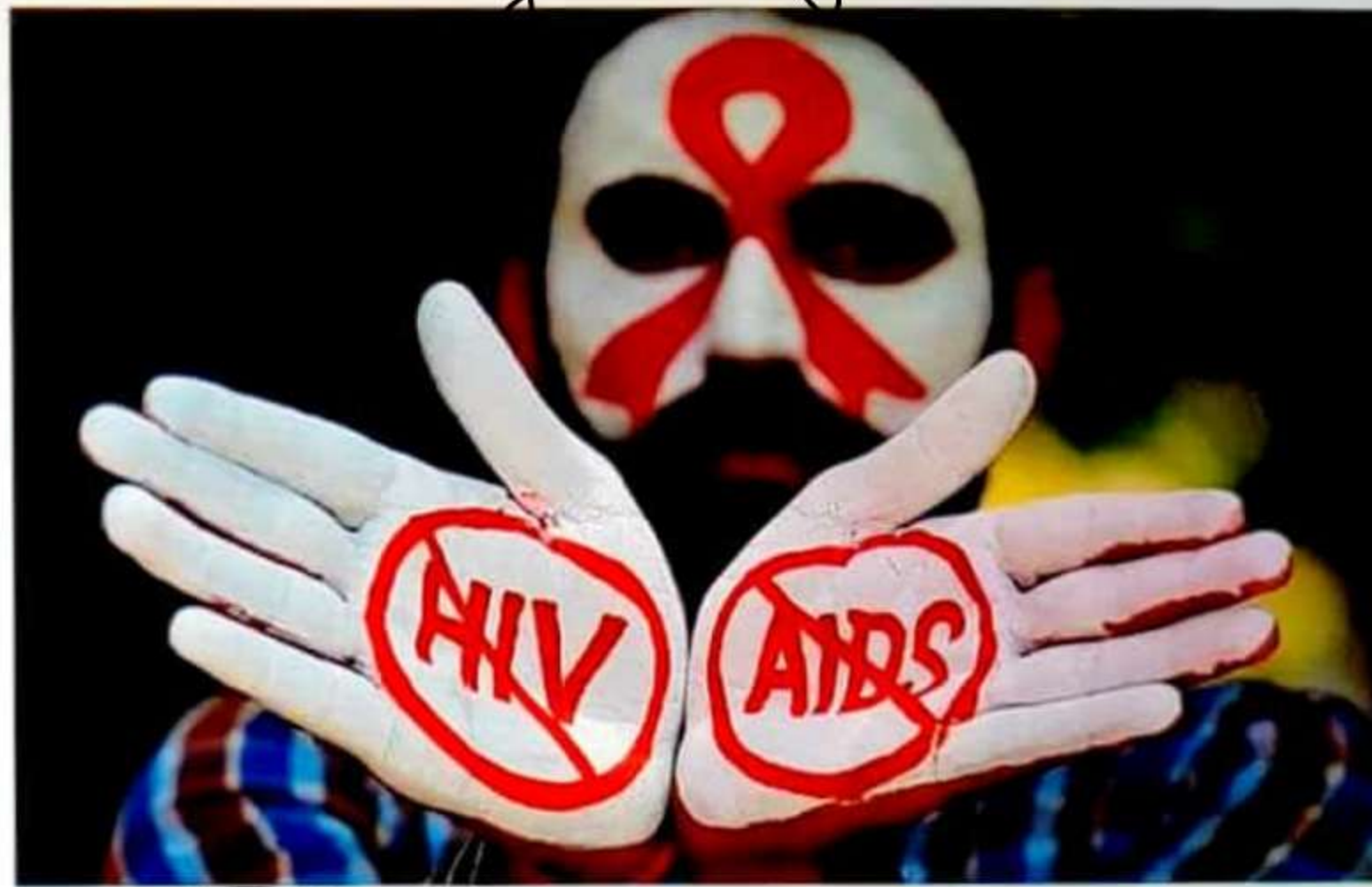
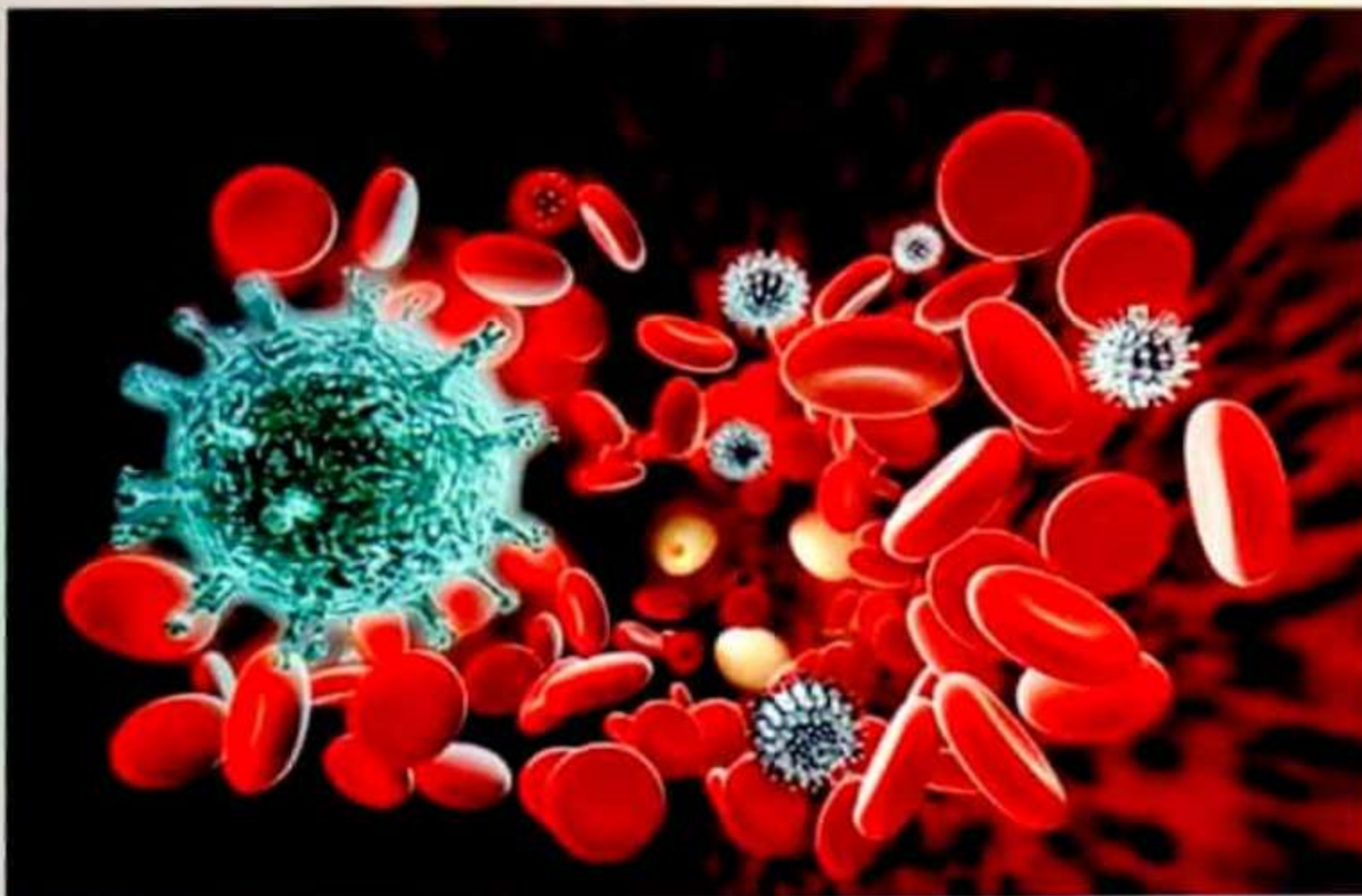
HIV does not spread by mere touch or physical contact.
It spreads only through body fluids.

u h
Serum

AIDS

Transmission

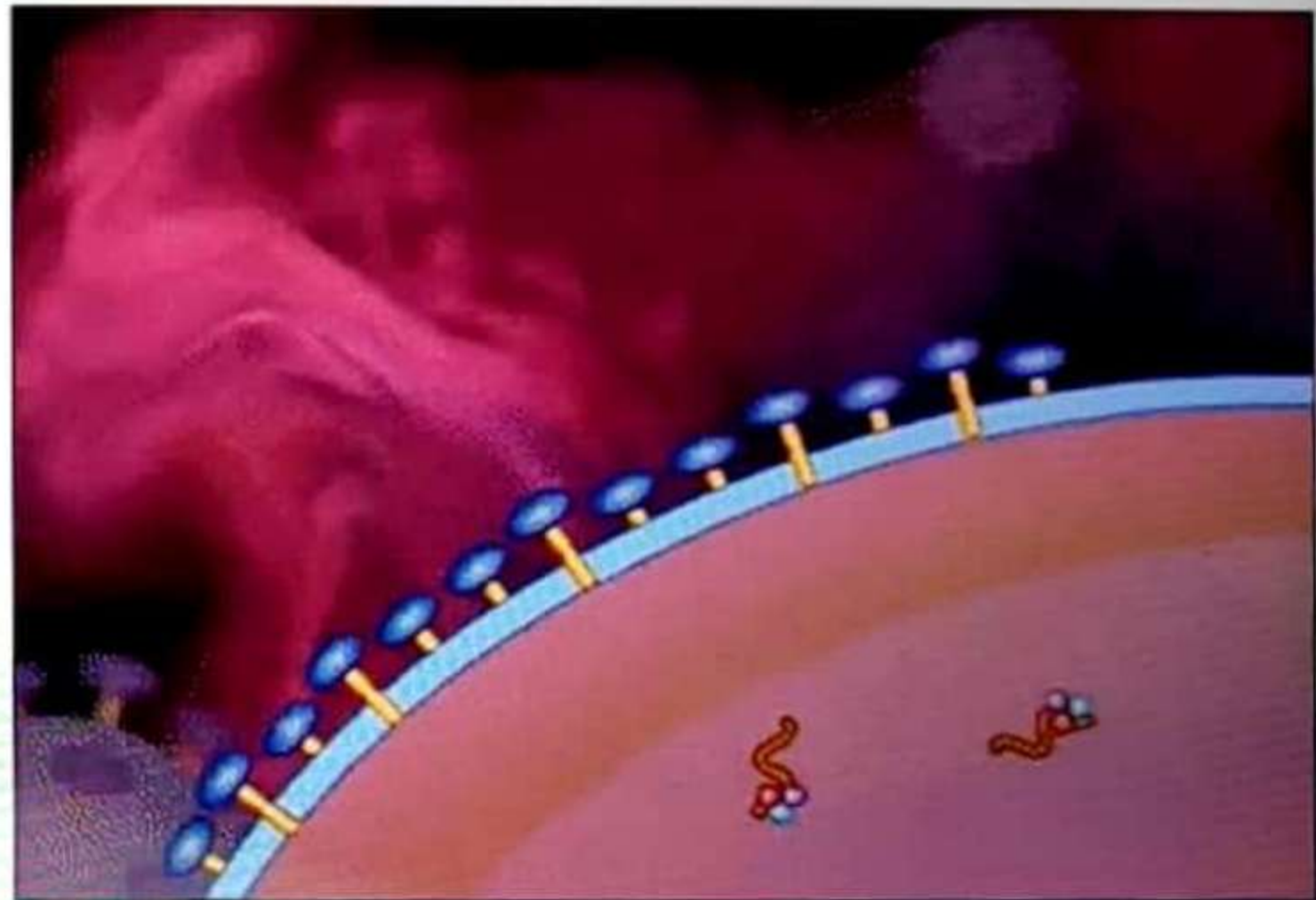
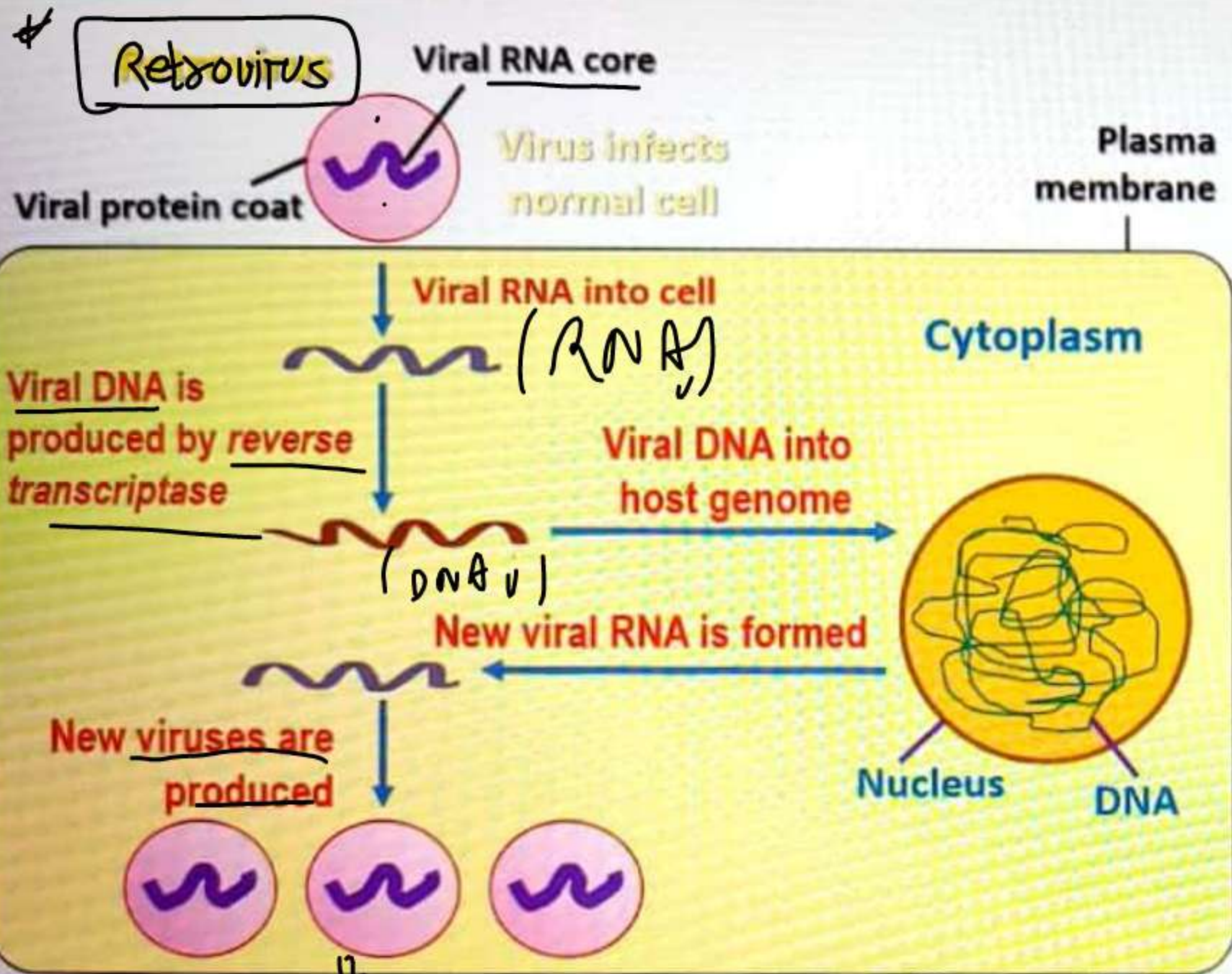
→ Prophylaxis as well as diagnosis gets poor.



There is a time-lag (from a few months to 5-10 years) between the infection and appearance of symptoms.

AIDS

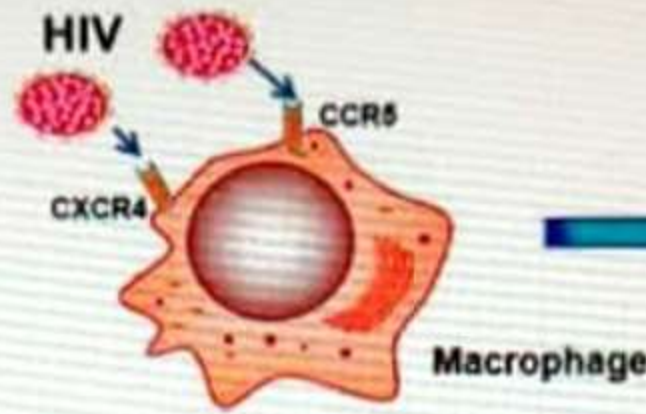
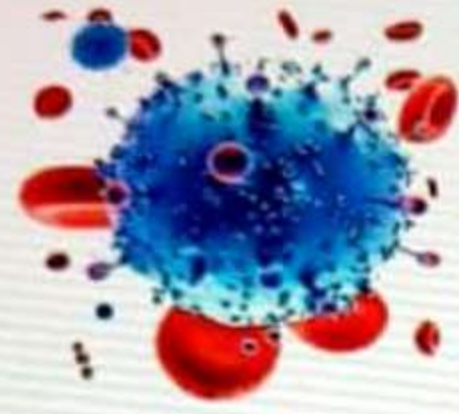
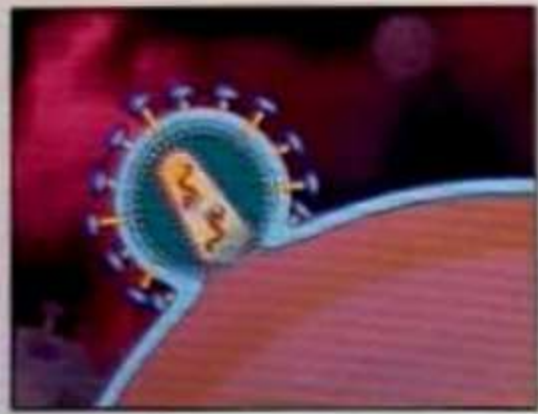
Replication of Retrovirus



New Virus attacks other **Animal Cell**.

AIDS

Life cycle of HIV



HIV enters body

To ~~macrophages~~
macrophages
(act as HIV factory)

RNA replicates in presence of reverse transcriptase to form viral DNA.

Viral DNA incorporates into host DNA

Infected cells produce viral particles

Weaken immunity

T-cells decrease

Attack other T_H cells

Replicates & produce progeny viruses

HIV enters into helper T-cells (T_H lymphocytes)

AIDS

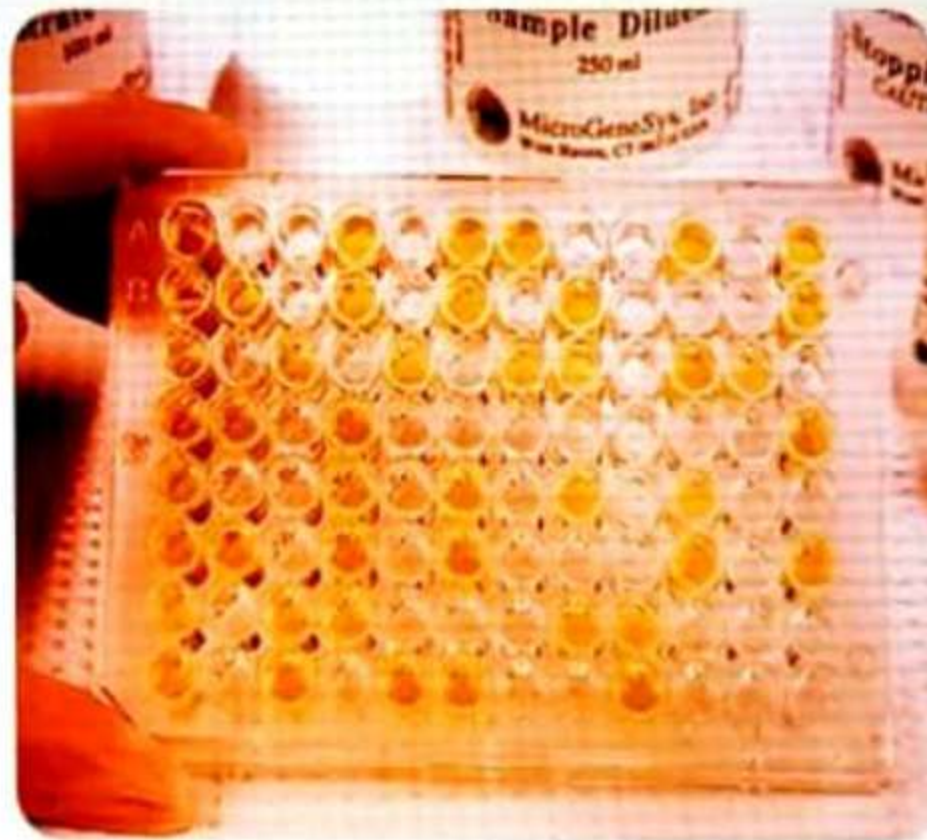
Effects, Diagnosis & Treatment

Effects



- During this period, the person suffers from fever, diarrhoea and weight loss.
- Due to deficiency of T_H cells, he may be infected with Mycobacterium, viruses, fungi & parasites like Toxoplasma.

(Detection) Diagnosis



ELISA test (Enzyme-linked immune-sorbent Assay).

Treatment



Anti-viral drugs are partially effective. They can only prolong the life of the patient.

AIDS

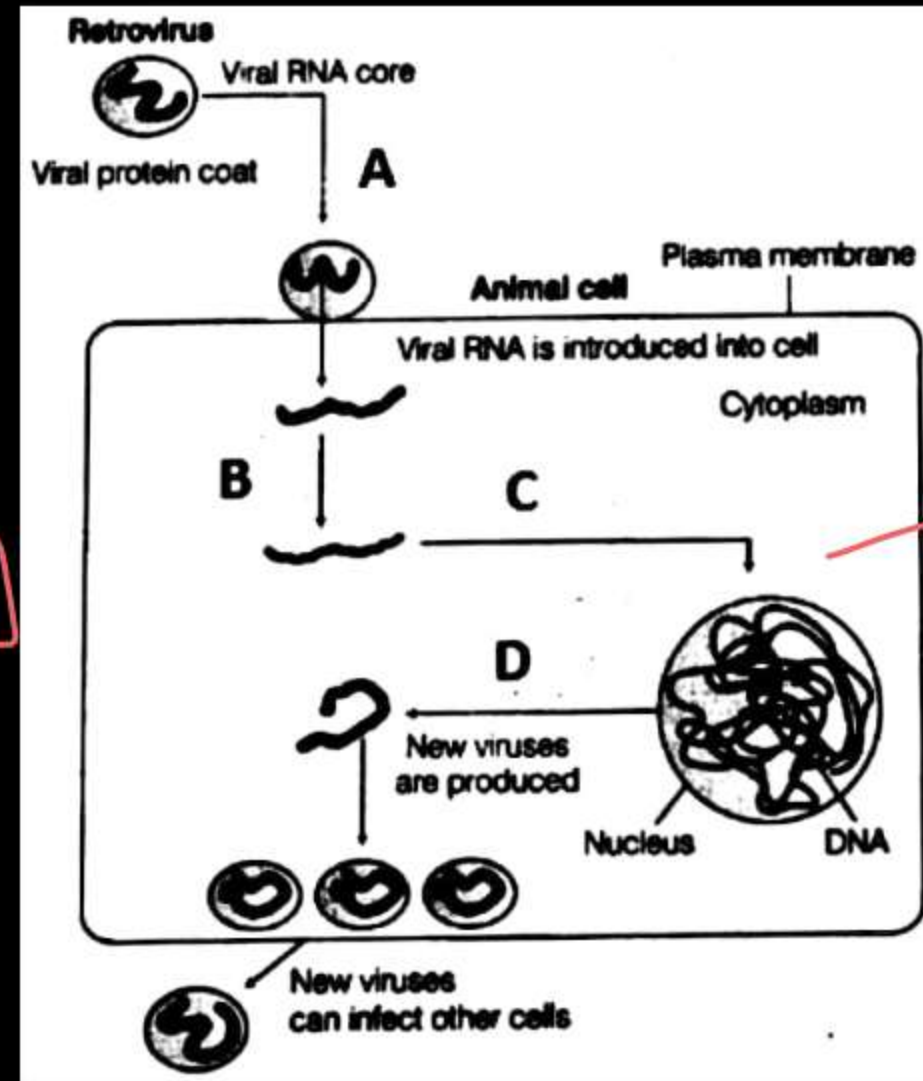
Prevention of AIDS



Study the diagram given and choose the correct statement:

(AIPMT)

- (A) A: retrovirus replicates outside the cell
- (B) B: viral DNA is produced by the host reverse transcriptase
- ~~(C) C: Viral DNA incorporates into the host genome~~
- (D) D: New viral DNA is produced by the infected cell.



→ takes over host's machinery

Opportunistic infections appear in AIDS patients when the HIV has destroyed :

→ Common cold, Environmental

(A) Macrophages

(B) T cytotoxic cells

~~(C) T helper cells~~

(D) B cells

B-cells stimulated by these

↓
Antibody

Mark the incorrect statement w.r.t. AIDS.

(A) AIDS is not spread by mere touch

~~(B)~~ Time lag between infection and appearance of AIDS symptoms is just ~~5-6~~ months only

→ 5-10 yrs

(C) It is caused by retro virus

(D) HIV enters body cells by receptor mediated

endocytosis (virus binds on Macrophage Receptor)

Which of the following diseases is related with the statement “Don’t die of ignorance”?

→ “N CERT”

- (A) Cancer
- ~~(B) AIDS~~
- (C) Hepatitis
- (D) Gonorrhoea

A certain X patient is suspected to be suffering from acquired immune deficiency (AIDS) syndrome. Which diagnostic technique will you recommend for its detection? / diagnosis

- (A) MRI
- (B) Ultra Sound
- (C) WIDAL
- ~~(D) ELISA~~

HIV that causes AIDS, first start destroying:

(A) B-lymphocytes

(B) Leucocytes

(C) Thrmobocytes

~~(D) Helper T-lymphocytes~~

At which stage of HIV infection does one usually shows symptoms of AIDS ?

(AIPMT)

- (A) When viral DNA is produced by reverse transcriptase
- ~~(B) When HIV replicates rapidly in helper T-lymphocytes and damages large number of these~~
- (C) Within 15 days of sexual contact with an infected person
- (D) When the infecting retrovirus enters host cells.

T_H : killed.

Immunity (↓)

(5-10 yrs, Months)

AIDS is caused by HIV, among the following, which one is not a mode of transmission of HIV?

(A) Transfusion of contaminated blood

(B) Sharing the infected needles

~~(C) Shaking hands with infected persons~~

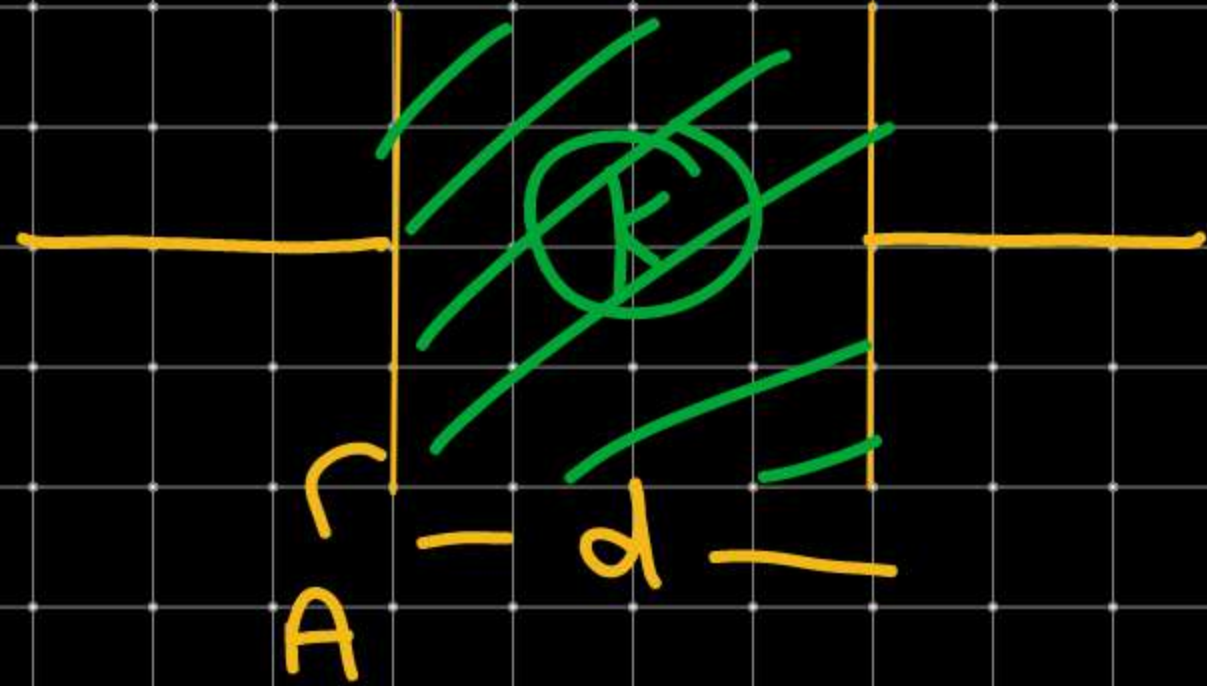
(D) Sexual contact with infected persons

kissing

*

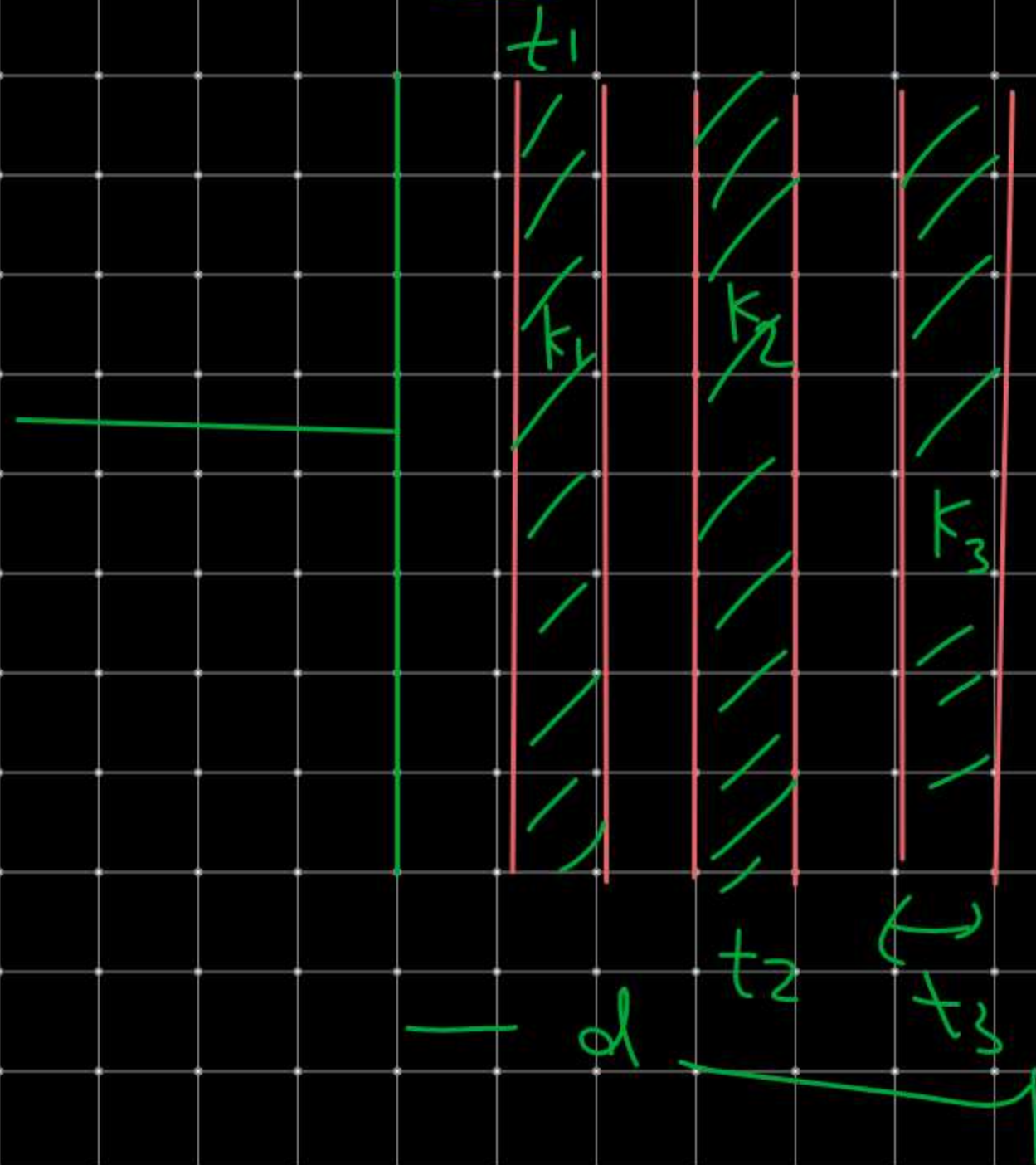
fluid exchange
is required)

⇒ dielectric inside PPC:-



$$C = \frac{A \epsilon_0 k}{d}$$

\Rightarrow Partial (OR) different-2 dielectric part inside capacitor



$$C = \frac{A\epsilon_0}{(d - t_1 - t_2 - t_3) + \frac{t_1}{k_1} + \frac{t_2}{k_2} + \frac{t_3}{k_3}}$$

$$C = \frac{Q}{\Delta V}$$