

27

2018 February

Tuesday

January

2018

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7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

Virus, viroids, Prion.

Virus

Virus are non living characters, they are not cells. They do not have a cytoplasm or any kind of cellular organelles to carry out any kind of metabolism.

Viruses are able to infect ~~the~~ all living forms including plants, animals, human beings and even micro-organism.

Study of virus is called virology.

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Wednesday

General character

- ① Metabolically inert. ② Viruses are obligate intracellular parasites.
- ③ Non living structure
- ④ Non cellular.
- ⑤ Contain a protein coat called the capsid.
- ⑥ Viruses have a nucleic acid core (containing DNA or RNA, one of the other, not both).
- ⑦ Capable of reproducing only when inside a host cell.
- ⑧ Capable of reproducing when inside a HOST cell.

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Some unique character of viruses.

- ① They are unique because they are alive and able to multiply inside the cell of other living things.
- ② The cell they multiply in is called the host cell.
- ③ A virus is made up of a core of genetic material, either DNA ~~or~~ or RNA, surrounded by a protective coat called a capsid which is made up of protein. ~~capsomere~~
- ④ ~~contains a protein coat called the capsid~~ ^{Friday} ~~the capsid~~ ²

Meaning of Virus - The name virus

came from a Latin word virus which means venom or poisonous fluid.

Although plant disease like leaf roll of potato and human disease like yellow fever, small pox etc. were

known for long time, the nature of causative agent was known to us quite later.

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2018 March

Saturday

February

2018

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Agriculture Chemist of Holland, observed a diseased tobacco plant showing mottling of leaf and named it mosaic.

4 } virus classification is the process of naming viruses and placing them into a taxonomic system used for cellular organisms.
 Sunday } virus classification is the subject of an ongoing debate and proposal.

Note - viruses ^{play} causing a role in causing some cancers. Most viruses are very specific about the type of cells they invade.

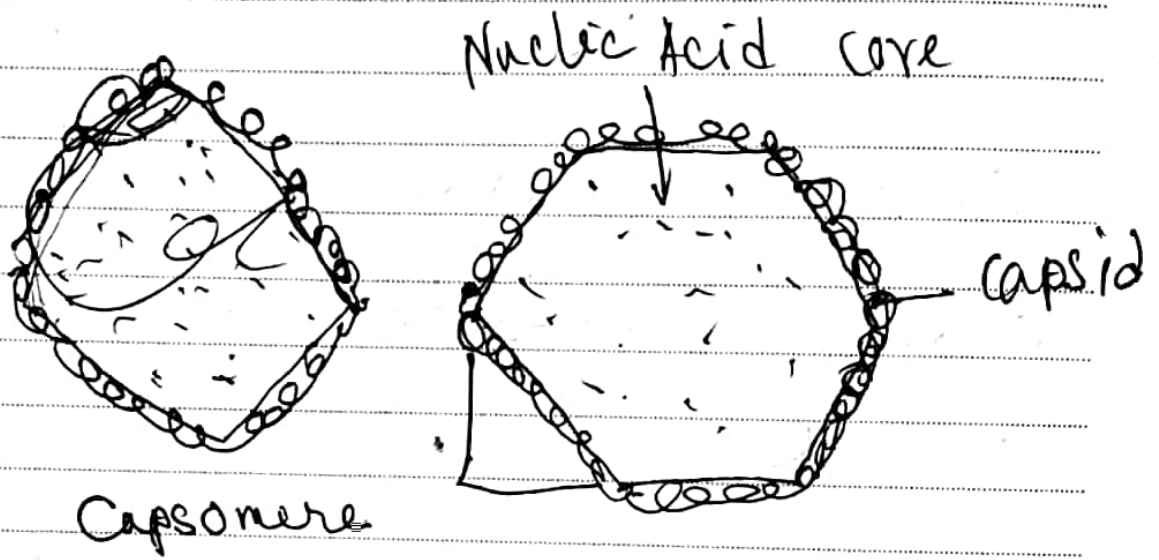
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There are specific sites called receptor sites that the viruses attach to on the host cell surface.

Morphology of virus — Viruses are acellular, meaning they are entities biological entities that do not have a cellular structure.

Viruses consist of nucleic acid core, an outer protein coating or capsid, and some times an outer envelope made of protein and phospholipid derived from the host cell.

* There is no respiration, growth & division energy storage during inner stage.

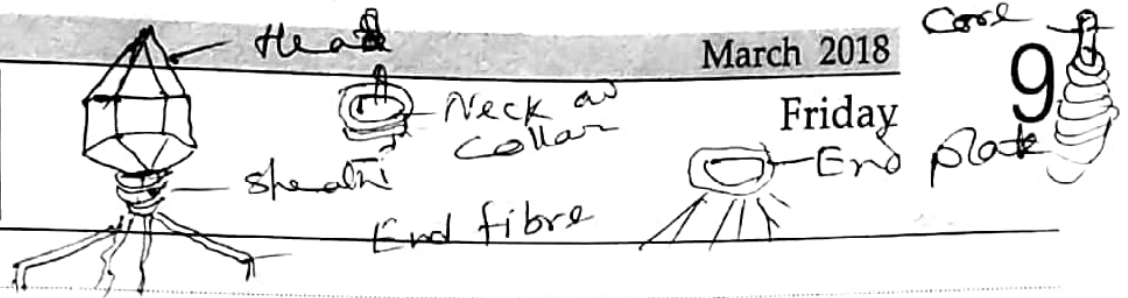


Generalized diagram of virion

April 2018

March 2018

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Bacteriophage, showing detailed structure

Structure:- Basically all viruses consist of a central core of nucleic acid surrounded by a protein coat as described below:-

(a) Capsid:- The outer protein coat of virus is called capsid. It is ^{composed} consist of numerous subunits of protein molecules called capsomeres. The capsomeres are in diff^t shapes being in the form of hollow prisms, pentagonal, hexagonal or lobular.

Capsid protect the inner nucleic acid against the action of nuclease enzyme.

Spindel

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The arrangement of

capsomere determines the shape of intact virus particle or virion which may be cubic, helical or complex.

③ Nucleic acid core:- The central core of the virus is composed of only one type of nucleic acid.

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animal Either DNA or RNA. Some viruses such as influenza and poliomyelitis contain RNA ~~and DNA~~ together with DNA. Usually, viral DNA is double stranded and RNA is single stranded. But in some viruses RNA ~~double~~ double stranded and DNA single stranded.

Potato spindle tuber viruses have their nucleic acid core naked

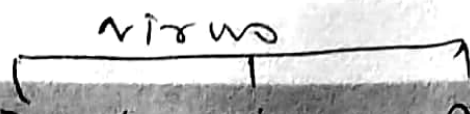
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March 2018

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Tuesday



Bacteriophage animal virus

Plant virus

(i.e. capsid absent) whereas

specialized viruses (mumps ~~virus~~ virus) contain additional membranes envelope around the capsid.