

1. What is Chikungunya?

Chikungunya is a disease caused due to alpha virus also known as Chik-V.

2. How is Chikungunya transmitted?

Chikungunya is transmitted to humans by a mosquitoes belonging to the species *Aedes aegyptii*.

3. Write the symptoms of Chikungunya.

- a) Symptoms of Chikungunya include:
- b) Fever up to 40°C or 104F.
- c) Rashes on the trunk region and occasionally on the limbs.
- d) Severe pain in multiple joints.
- e) Headache, conjunctivitis and slight photophobia
- f) Fever may last for two to five days.
- g) Joint pain may last for much longer period some times for years.

4. How does Chikungunya spread?

The mosquitoes (*Aedes aegyptii*) breed in stagnant water. They bite during the day. They are most active early in the morning and late afternoon.

5. Why do Chikungunya cases increase during monsoon season?

During monsoon season, rain water collects in ditches, coconut shells; waste containers, unused pots etc. become breeding ground of mosquitoes. Hence the number of cases of Chikungunya cases increase during monsoon.

6. Mention the methods to prevent the spread of Chikungunya.

- a) Avoid stagnation of water especially during monsoon season.
- b) Clear water collected in coconut shells, waste containers like unused pots etc.
- c) Control the disease by killing immature larvae of mosquitoes by spraying insecticides.
- d) Wear long sleeved and full length clothes to avoid mosquito bites.
- e) Wear light coloured clothing.
- f) Use safe mosquito repellents and mosquito nets to prevent mosquito bite.

7. What is Dengue?

Dengue is an infectious tropical disease caused by Dengue virus.

8. How does Dengue fever spread?

Dengue fever is transmitted by the mosquito (*Aedes aegyptii*).

9. Mention the symptoms of Dengue fever.

- a) At the onset of the disease – headache, fever, exhaustion, severe muscle and joint pain, swollen glands and rashes.
- b) Bleeding gums, severe pain behind the eyes, redness in palms and soles.

10. What is the main symptom of Dengue fever?

Reduced platelet count is the main symptom of Dengue fever. The platelet count in normal healthy person is 2,50,000 in cm³ of blood but in a person with Dengue fever the platelet count will be 1,00,000 in cm³ of blood.

11. How does Dengue infect humans?

- a) Mosquito (*Aedes aegyptii*) bites an infected person.
- b) Virus enter the body of mosquito
- c) Infected mosquito bites a healthy person.
- d) Healthy person is infected by Dengue virus.

12. How can we identify the mosquito (*Aedes aegyptii*)?

The mosquito (*Aedes aegyptii*) can be easily recognized by white spots on the body and the leg region. It rests indoors in dark places.

13. Name the mosquito responsible for spreading both Chikungunya and Dengue fever.

Aedes aegyptii

14. Give reason: A person becomes susceptible to Chikungunya and Dengue infection.

The mosquito (*Aedes aegyptii*) which spreads both Chikungunya and Dengue bites during the day time and it is likely to go unnoticed as it does not cause skin irritation. Hence a person is more susceptible to Chikungunya and Dengue fever easily.

15. What is the cure for Dengue fever?

A decoction prepared using young leaves of papaya given to Dengue patients can cure it because it increases the number of platelets.

16. What is bird flu or Avian flu?

Bird flu or Avian influenza is a viral fever that infects humans.

17. How does bird flu or Avian flu spread?

Avian flu spreads by touching contaminated surfaces. Birds infected with this flu continue release the virus in their faeces and saliva for as long as 10 days.

18. Mention the symptoms of Avian flu.

Infection in humans cause symptoms like – cough, diarrhoea, breathing difficulty, fever more than 38°C, headache, muscle pain, running nose and sore throat.

19. Mention the steps that can be taken to prevent the spread of bird flu.

- a) Travellers should avoid visits to bird markets of infected areas.
- b) People who work with birds should use protective clothing and special breathing masks.
- c) Partially cooked and uncooked meat should be avoided.

20. What is meant by STD?

STD stands for Sexually Transmitted Disease. *Sexually transmitted diseases (STDs)* are infections that can be transmitted through sexual contact with an infected individual.

Ex: Syphilis, Gonorrhoea, Genital Warts, Genital Herpes, Hepatitis B, AIDS.

21. What is Syphilis? How is it caused?

Syphilis is a sexually transmitted Disease (STD) caused by the bacterium – Treponema Pallidum.

22. How does Syphilis spread?

Syphilis is transmitted through sexual contact with infected person. From mother to foetus through placenta or direct contact with infected blood.

23. Write the symptoms of Syphilis.

- a) Ulcers appear on the nose, roof of mouth and lower leg.
- b) Damage to organs like brain, nerves, eyes, heart, blood vessels, liver, bones and joints.
- c) Difficulty in coordinating muscular movements, paralysis, numbness, gradual blindness and memory loss.

24. How can Syphilis be prevented?

Transmission of Syphilis can be prevented by avoiding sexual contact with infected person.

25. What is Gonorrhoea?

Gonorrhoea is a sexually transmitted disease caused by the bacterium Neisseria gonorrhoeae.

26. Write the symptoms of Gonorrhoea.

- a) In Men, burning sensation with urination and discharge from genitals.
- b) In women vaginal discharge and pelvic pain.

27. How can Gonorrhoea be prevented?

Transmission of Gonorrhoea can be prevented by avoiding sexual contact with infected person.

28. What are genital warts?

Genital warts are soft growth on the skin and mucus membranes of the genitals.

29. What causes genital warts?

Genital warts are caused by a virus Human Papilloma Virus (HPV).

30. How can the transmission of genital warts be prevented?

- a) Avoiding any kind of sexual contact with infected person.
- b) Women in the age group 9 – 26 years can get vaccinated to protect against HPV.

31. What is genital herpes?

Genital herpes is a sexually transmitted disease caused by Herpes simplex virus type – 1 (HSV – 1) and type–2(HSV – 2).

32. Write the symptoms of genital herpes.

- a) Appearance of one or more blisters on or around the genitals or rectum.
- b) The blisters break leaving tender ulcers or sores. It may take two to four weeks to heal.
- c) Outbreak of blisters appear for weeks or months after the first.

33. How can genital herpes be prevented?

Transmission of genital herpes can be prevented by avoiding sexual contact with infected person.

34. What is hepatitis B?

Hepatitis means liver infection or cirrhosis.

35. How is hepatitis B caused?

Hepatitis is caused by infection of hepatitis B virus (HBV). It is highly concentrated in blood. Other fluids which contain less amount of virus are body fluids like saliva, wound exudates, semen and vaginal secretions.

It is transmitted by exposure to infected blood or body fluids, sexual contact with infected person and drug abuse.

36. How can hepatitis B infection be prevented?

Temporary protection for 3 to 6 months from HBV infection can be obtained by taking a vaccine called Hepatitis B Immune Globulin (HBIG).

37. What is AIDS?

AIDS stands for Acquired Immuno deficiency Syndrome. It is a sexually transmitted disease.

38. How is AIDS caused?

AIDS is caused by the Human Immuno Deficiency Virus (HIV).

39. Explain the structure of a HIV.

A HIV cell is spherical in shape containing RNA as its genetic material. It is covered by a membrane made up of two layers of fatty material. Inside the membrane there is a core made up of proteins. In the centre of the core, RNA is present along with the enzyme reverse transcriptase. This enzyme acts as a catalyst on RNA helping in the synthesis of DNA in the host cell.

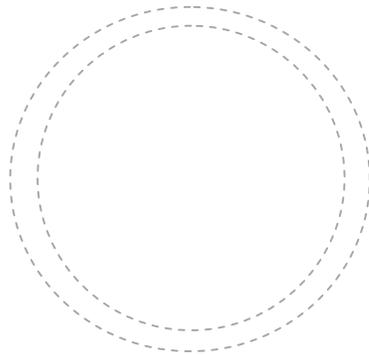
40. What is meant by retro virus?

Virus which contains RNA as genetic material is called as retro virus.

41. To which group of viruses does HIV belong?

HIV belongs to retro group of viruses which are capable of giving rise to DNA.

42. Draw a neat labelled diagram showing the structure of a HIV cell.



43. Mention the genetic material and enzyme present in HIV.

The genetic material present is RNA. The enzyme present is reverse transcriptase.

44. Give reason: The symptoms of AIDS or HIV take number of years to appear.

When HIV enters into a host cell, the RNA helps in synthesis of DNA. This HIV gets adapted to the host body so well that the body cells fail to identify the virus as intruder. Thus, the symptoms take years to appear.

45. Give reason: A HIV affected person is attacked by various diseases.

HIV destroys the natural immunity of the body. This leads to secondary infections. Thus, the affected person is attacked by various contagious diseases.

46. What is meant by HIV +ve?

A HIV infected person is termed as HIV +ve.

47. Mention the modes of transmission of HIV.

- a) Sexual contact with an infected person.
- b) Transfusion of infected blood.
- c) Sharing of needles and syringes with an infected person.
- d) From infected mother to the embryo through placenta.
- e) Infected mother breast feeding her infant.

48. How does HIV transmit from mother to infant?

A HIV +ve mother can transmit HIV to the embryo through placenta. It is also transmitted when a HIV +ve mother breast feeds her child.

49. Give reason: AIDS by itself is not a disease but a syndrome.

AIDS patients show several symptoms which occur at the same time. So AIDS itself is not a disease but a syndrome.

50. Why mosquitoes do not spread AIDS?

HIV multiplies only in lymphocytes and infection is acquired through contact with body fluids like semen, blood and vaginal fluids. The virus responsible for the AIDS infection is regarded as food to the mosquito and is digested along with the blood meal. As a result, mosquitoes that ingest HIV-infected blood digest that blood within 1-2 days and completely destroy any virus particles that could potentially produce a new infection. Since the virus does not survive to reproduce transmission of HIV by mosquitoes is not possible.

51. Mention the methods by which AIDS/HIV is not transmitted.

AIDS/HIV does not spread by:

- a) Kissing or hugging an infected person.
- b) Using public toilets, swimming pools
- c) Mosquitoes, flies and other insects.
- d) Travelling with infected person.
- e) Shaking hands with infected person.
- f) Living and working with infected person.
- g) Using bed sheets, towels, combs used by infected person.
- h) Touching door knobs used by infected person.
- i) Sharing food, utensils used by infected person.

52. Mention the methods of prevention of AIDS/HIV.

As there is still no medicine for AIDS, the only way is to avoid HIV infection.

The safest way to protect from HIV infection is to practice **3A's**:

- a) **A**voiding sex with multiple partners/ infected person.
- b) **A**bstaining from drug use or other skin piercing instruments unless it is absolutely necessary.
- c) **A**voiding contact with body fluids of infected person.

53. Give reason: AIDS is an infectious disease but not a communicable disease.

AIDS is an infectious disease but not transmitted through air, water & food. So it is not a communicable disease.

54. A boy who is HIV +ve was denied admission in a school. The court did not approve this. What scientific justification do you make on this?

HIV is not transmitted by touching, sharing common toilet, playing together or by sharing / eating food together. Hence schools should not deny admission.

Fill in the blanks:

1. The word Chikungunya is derived from **Makonde** language.
2. The meaning of Chikungunya in Makonde language is **that which bends up**.
3. Joint pain is one of the symptoms of the viral disease **Chikungunya**.
4. Chikungunya is infection caused due to **alpha virus** or **Chik-V**.

5. Chikungunya is spread by mosquito **Aedes aegyptii**.
6. Dengue fever is also known as **break-bone fever**.
7. Dengue fever is transmitted by mosquito **Aedes aegyptii**.
8. Dengue is more severe in people with **weak immune system**.
9. The main symptom of Dengue fever is **reduced platelet count**.
10. A decoction prepared using young leaves of **papaya** is used as cure for **Dengue fever**.
11. STD stands for Sexually Transmitted Disease.
12. Syphilis is transmitted by the bacterium **Treponema Pallidum**.
13. Gonorrhoea is transmitted by bacterium **Neisseria gonorrhoeae**.
14. Genital warts are caused by virus **Human Papilloma Virus (HPV)**.
15. Genital Herpes is caused by Herpes Simplex Virus type –1 and type – 2.
16. The organ which is affected by Hepatitis B is **liver**.
17. The vaccine to prevent hepatitis B is **HBIG**.
18. HBIG stands for Hepatitis B Immune Globulin.
19. HBIG provides protection against Hepatitis B for **3 – 6 months**.
20. AIDS stands for Acquired Immuno Deficiency Syndrome.
21. AIDS was recognised for the first time in **USA in 1981**.
22. HIV stands for Human Immuno deficiency Virus.
23. In India, the first AIDS patient was identified at **Chennai** in **1987**.
24. The enzyme present in HIV is **Reverse transcriptase**.
25. The group to which HIV belongs is **retrovirus**.
26. The most dreadful viral disease that has affected human society in recent decades is **Hepatitis B**.
27. The genetic material in HIV is **RNA**.
28. HIV is covered by a membrane made up of **two** layers of **fatty** material.
29. Hepatitis B is dangerous since it damages the **liver**.
30. The enzyme reverse transcriptase helps in the **synthesis of DNA in the host cell**.
