

NCERT SOLUTIONS

CLASS IX SCIENCE

CHAPTER 13- Why Do We Fall ILL

Q1. State two conditions for good health.

Ans.

- A. A state of mental, physical and social well-being.
- B. Cleaner and a better environment.

Q2. Mention two conditions important for being disease free.

Ans.

- A. Personal and domestic hygiene.
- B. Clear and better surroundings.

Q3. Are the answers to the above questions the same?

Ans.

No, the answers to the above questions aren't necessarily the same because a person can be free from diseases and germs but he could be having poor mental and social health.

Q4. Mention any three reasons that could cause you to believe that you are sick and you ought to visit a doctor. If only one of these symptoms were present, would you still visit a doctor?

Ans.

The three reasons are (a) High fever, (b) Diarrhea and (c) Stomach pain. Even if only one of them were to be present, one should definitely visit the doctor to get the proper treatment before the sickness gets worse.

Q5. From the following health issues which one do you think would affect your health severely in the long run?

Ans.

- Jaundice
- Hair fall
- Acne

From the above three examples Jaundice definitely has the most adverse health effects as it affects the liver. The other two are limited to skin and hair, which really don't pose a life-threatening situation.

Q6. What are the various ways through which infectious diseases are transmitted?

Ans.

- Through food and water- If one consumes food or water contaminated with bacteria, viruses, worms etc. He/she can come down with diseases such as hepatitis, cholera, etc.
- Through air- some germs are air-borne and can be transmitted through the air from one infected person to the other. E.g. tuberculosis, influenza, etc.
- Through contact- some diseases are spread from one person to the other through contact. E.g. scabies, ring worms, etc.
- Through sexual contact- they are called Sexually Transmitted Diseases. E.g. HIV, gonorrhea, herpes, etc.
- Through body fluids- some germs are present in body fluids like sweat, semen, blood. When another person comes in contact with contaminated body fluids the diseases get transmitted to him/her. E.g. Ebola, HIV, etc.
- Vectors- These are organisms that carry the germs from one place to the other. E.g. mosquitoes, dogs, fly, etc.

Q7. What precautionary measures can you take in school to mitigate the spread of diseases? A. The precautionary steps one can adopt in school to mitigate the spread of diseases are:

Ans.

- Washing our hands properly before eating.
- Avoiding coming to school when one is affected with a communicable disease.
- Using a handkerchief while sneezing or coughing.
- Vaccinating oneself before the infection starts.
- Maintaining a clean and hygienic environment in school.

Q8. What is immunization?

Ans.

Immunization is the process of rendering your body immune to certain diseases through vaccination.

Q9. What are the immunization programs available at health centers in and around your locality?

Ans.

The immunization programs available at health centers near my locality are: 1.Child immunization program, 2. Polio eradication program, 3.H1N1 vaccination.

Q10. In the last one year, how many times did you fall sick? What were the illnesses? What steps could you have taken in your personal habits and in your surroundings to mitigate the chances of contracting them?

Ans.

I fell sick twice in the last one year, once it was common cold and next it was diarrhea. In order to have prevented myself from falling sick to these diseases, I could have cleaned my hands before eating, not played in the rain and kept my surroundings clean.

Q11. A doctor/nurse/health worker gets exposed to more sick people than others in the community. How do they avoid getting sick themselves?

Ans.

A doctor/nurse/health personnel always keep their nose and mouth covered, they wear gloves and cover their bodies with coats, when dealing with sick people. Moreover they always sanitize themselves after leaving their patients. This is how they avoid getting sick.

Q12.What are the three most common diseases in your neighborhood? And what steps do you suggest to mitigate them?

Ans.

Common-diseases in neighborhood	Steps to bring down the disease spread
1.Malaria	Clean surrounding
2. Typhoid	Clean drinking water
3.Cough and cold	Childhood immunisation

Q13. A baby cannot tell his/her caretaker that he/she is sick. So how can we tell that the baby is sick and which sickness he/she has been affected with?

Ans.

We can tell that a baby is sick though symptoms like increased body temperature, incessant crying, loose motions ,etc. And we could identify the sickness by studying the symptoms.

Q14. Under which circumstance is a person most likely to fall sick?

- When she is recovering from cholera.
- When she has recovered from cholera but she fell down and broke her leg.
- When she is on a four days fast after recovering from cholera and she is taking care of a typhoid patient.

Ans.

She is most likely to fall sick in the last option as she hasn't been supplying her body with the nutrients required to sustain her recovering body, which in-turn lowers her immune system. And on top of that she is being continuously exposed to germs as she is taking care of a typhoid patient. Hence, in such a case it is highly likely that she will fall sick.

Q15. Under which of the following conditions are you most likely to fall sick?

- (a) When you are playing Basketball.
- (b) When you are playing Dota2.
- (c) When your friend is suffering from influenza.

Ans.

(c)When your friend is suffering from influenza, as it is a communicable and an air-borne disease.

Q16. Multiple Choice Questions.

1. The disease that affects our lungs is :

- a) Jaundice
- b) Tuberculosis
- c) Scabies

d) Herpes

Ans: Tuberculosis

2. The BCG vaccine provides immunity against :

a) Dengue

b) Influenza

c) Ebola

d) Tuberculosis

Ans: Tuberculosis

3. Malaria is caused by :

a) Anopheles mosquito

b) Bacteria

c) protozoa

d) bacteria

Ans: Anopheles mosquito

4. Trypanosoma, leishmanial, and Plasmodium are the examples of :

a) Protozoa

b) Worms

c) Fleas

d) Viruses

Ans: Protozoa

5. Diarrhea, cholera, typhoid are the diseases that have one thing in common, which is :

a) All of them are air borne

b) All of them are caused by a virus

c) All of them are caused by contaminated food and water

d) All of them are cause headaches.

Ans: All of them are caused by contaminated food and water

6. HIV virus attacks one of the following cells in our body:

a) Liver cells

b) Neurons

c) Nephrons

d) White blood cells

Ans: White blood cells

7. Pathogens of disease are :

a) Viruses

b) Bacteria

c) Protozoa

d) All of the above

Ans: All of the above

8. Worm caused disease is :

a) Herpes

b) Filariasis

c) Rabies

d) Conjunctivitis

Ans: Filariasis

Q17. Short answer type questions.

1. Define health, disease, pathogens, and antibiotics.

Ans.

Health- it is a state of mental, physical and social well-being. Disease- it is the deviation from the normal healthy well-being of an individual. Pathogens- they are disease causing microbes. E.g. bacteria, worms, fungi, etc. Antibiotics- these are drugs that block the biochemical pathways important to bacteria. Thus, killing those bacteria.

2. What do you understand by symptoms of a disease?

Ans.

Symptoms are the signs of a disease which indicate the presence of that particular disease.

3. What are acute diseases?

Ans.

Acute diseases are disease that last for a very short period of time.

4. What are chronic diseases?

Ans.

Chronic diseases are diseases which last for a very long period of time.

5. What are infectious diseases?

Ans.

Infectious diseases are disease which can spread from one infected person to another. E.g. Ebola.

6. Name any one disease caused due to genetic abnormality.

Ans.

Sickle cell anemia.

7. Name two diseases caused by protozoa.

Ans.

Trichomoniasis and malaria.

8. Name two diseases each caused by bacteria, virus, fungi.

Ans.

Bacteria- typhoid, cholera. Virus- Ebola, Mumps Fungi- Jock itch, Ring worm.

9. State the full form of AIDS.

Ans.

Acquired Immuno Deficiency Syndrome.

10. What causes sleeping sickness ?

Ans.

A protozoan called trypanosoma causes sleeping sickness.

11. What causes kala-azar?

Ans.

leishmania.

12. State two air-borne diseases.

Ans.

Anthrax and Smallpox.

13. State two organ specific diseases

Ans.

Autoimmune Hepatitis- affects the liver. Grave's Disease- affects the thyroid.

14. Which virus is responsible for AIDS?

Ans.

HIV virus is responsible for AIDS.

Q18. What's the difference between chronic and acute disease?

Ans.

Chronic diseases last for a longer period and it has drastic effects on the body. Whereas, acute diseases last for a shorter period and they do not have a major effect on the body.

Q19. What are two main causes of disease?

Ans.

The two main causes are immediate and contributory causes. Immediate cause- This is due to pathogens entering our bodies. Contributory cause- these are secondary factors which allow these pathogens to enter our bodies through dirty water, contaminated food, infected surroundings, etc.

Q20. Define and give examples for a vaccine.

Ans.

Vaccine is an antigenic substance prepared from the agent causing the disease, which is given in advance to a body to provide immunity against certain diseases. E.g. chickenpox vaccine, hepatitis vaccine, polio immunization.

Q21. Antibiotic penicillin, what is it? Give its function.

Ans.

Penicillin is a drug which does not allow a bacteria to build a protective wall thus it dies off easily. It is used to cure diseases and infections caused by bacteria.

Q22. A bacteria is a cell which is destroyed by an antibiotic, our body is also made up of cells. How come antibiotics don't affect our bodies as well?

Ans.

An antibiotic blocks the biochemical pathway through which it builds a protective cell wall. Human body cells don't have this cell wall so antibiotics cannot have any such effect on our body.

Q23. How can cholera become an epidemic in a locality?

Ans.

Cholera is a communicable disease that spreads through contaminated water and food. Let's say a person living in a locality contaminates the local water supply with cholera through his excreta. Now, all those people of that locality who drink that water will get cholera.

Q24. State the organs affected by the following diseases: Jaundice, malaria, typhoid.

Ans.

Jaundice- liver, Malaria- liver and RBCs, Typhoid- infects the blood.

Q25. Why are sick patients asked to take bed rest?

Ans.

Sick patients are asked to take bed rests so that they can conserve their energy which can be used to heal their recovering organs, more over if they move around there is higher chances of them getting infected with a disease as their immune system is already lowered.

Q26. How do we kill microbes that enter our bodies?

Ans.

We kill these disease causing microbes with the help of medicines that block the microbial synthesis pathways of microbes.

Q27. What are disease specific means of prevention?

Ans.

Disease specific means of prevention is the use to vaccine which prevents specific diseases from affecting us. E.g. Tetanus vaccine, Rabies Vaccine, etc.

Q28. Why is the creation of antiviral drugs hard?

Ans.

Viruses can live, grow and multiply only inside a host cell. They cannot be grown or cultured outside host tissues, thus it is relatively hard to make anti-viral drugs.

Q29. Write a short note on Malaria, its symptoms and control.

Ans.

Malaria is caused by a protozoan that lives in blood. The parasite enters our bodies when a female anopheles mosquito having the protozoa sucks our blood. This protozoa affects our liver and blood cells. Symptoms- Muscular pain, headache and very high fever. Control- keeping the surroundings clean with no stagnant water, using mosquito repellants, use of quinine drug.

Q30. What is AIDS? How does a person contract AIDS?

Ans.

AIDS or Acute Immuno Deficiency Syndrome is a disease caused by the Human Immunodeficiency Virus. A person with AIDS has severely affected immune system. Hence, he or she dies from other diseases that thrive from the lack WBCs in the HIV infected body. A person contracts AIDS through the following ways :

- Blood transfusion
- Sexual intercourse
- From infected mother to a baby (in the womb)
- Sharing of needle with infected people
- Breast feeding(if the feeder is infected).

Q31. Becoming infected by an infectious microbe does not always develop into a disease. Why?

A. This is because our immune is always active and when foreign bodies (microbes) enter our body, the immune system instantly attacks it trying to kill it. So in cases where our immune system is successful in killing the infectious microbe we don't develop the disease it was supposed to cause.

Q32. State the three limitations we face when dealing with an infectious disease.

Ans.

- 1) The infected person can serve as the source from where the infection may be spread.
- 2) The treatment is most likely to take time, thus the suffering person will be bedridden for some time.
- 3) If someone contracts a severe disease, their body functions are damaged and may never recover.

Q33. State the common methods of transmission of diseases.

Ans.

The common methods of disease transmission are:

- 1) By air- common cold, tuberculosis.
- 2) By food and water- cholera, jaundice.
- 3) By mosquito bite- dengue
- 4) By direct contact- Ebola, scabies.

Q34. State the basic conditions necessary for good health.

Ans.

- 1) Personal Hygiene
- 2) Clean surroundings and environment
- 3) Proper balanced and nutritious diet
- 4) Proper regular rests

Q35. If someone in the family gets an infectious disease, what precautions steps will you take to help that person recover faster and prevent other family members from getting infected.

Ans.

- 1) The infected person should be kept isolated in a separate room.
- 2) The surroundings and the house need to be kept clean.
- 3) His(the patient) clothes and utensils should be sanitized regularly.
- 4) Separate towels, sheets and blankets should be used by the patient.
- 5) Clean and boiled drinking water has to be given to the patient.
- 6) A balanced and nutritious meal has to be provided to the patient

5) Balanced and harmless medicine to be provided to the patient.

7) The patient should be allowed enough rest to fully recover.

Q36. What are the different methods used for the treatment and prevention of diseases?

Ans.

Principles of treatment for diseases are:

1. To reduce the effect of the diseases.
2. To kill the cause of the disease i.e. to kill the microbes like bacteria, fungi, protozoa.

Principles of prevention are :

(a) General ways: It relates to preventing exposure to the microbes, which can be done in the following ways:

- For avoiding air borne infections- Avoid public spaces, cover your nose while coughing sneezing.
- For water borne infection- drink safe and filtered water.
- For vector borne diseases- keep the surroundings clean, cover your food and water. Do not allow stagnant water to form.
- Self immunity- exercise regularly to keep your immune system up

(b) Specific Ways : by giving vaccines, regular checkups and medications.

Q37. State the mode of transmission for the following diseases: Malaria, AIDS, Jaundice, Typhoid, Cholera, Rabies, Tuberculosis, Diarrhea, Hepatitis, Influenza.

SL. No	Diseases	Mode of transmission
1.	Malaria	Mosquito bite (Female Anopheles mosquito protozoa).
2.	AIDS	Infected blood, semen, mother's milk, from to foetus.
3.	Jaundice	Contaminated water.
4.	Typhoid	Contaminated food and water.
5.	Cholera	Contaminated food and water.
6.	Rabies	Bite of rabid animal
7.	Tuberculosis	Cough and sneeze droplets.
8.	Diarrhoea	Contaminated food and water.
9.	Hepatitis	Contaminated food and water.
10.	Influenza	Cough and sneeze droplets

Q38. Name the micro-organisms that cause infectious disease and name a few diseases caused by them:

Ans.

- Bacteria- diarrhea, syphilis, tetanus
- Virus- Ebola, AIDS, polio
- Protozoa- malaria, sleeping sickness, kala-azar
- Fungi- athlete's foot, jock itch, food poisoning.

Q39. AIDS is spreading globally at a very fast rate, a group of class IX students made a module on its prevention and posted it on social networking site.

a) What is the cause of AIDS?

b) Provide two ways to prevent it

c) What values of students is reflected in this act?

Ans.

(a) HIV virus causes AIDS.

(b) Two steps to prevent AIDS are

1. having protected sex and
2. using disposable syringes.

(c) Through this act students show that they want to take initiative in the fight against aids.

Q40. (a) Why is a balanced diet necessary for maintaining a healthy body? (b) Name two diseases caused by junk food.

Ans.

(a) A balanced diet provides all the nutrients required in our body, in the correct amount.

(b) Two diseases caused by junk food are Obesity and High blood pressure.

Q41. (a) Is fever a disease? (b) What role do the antibiotics, given to a patient with fever, play?

Ans.

(a) Fever is not a disease, it is a symptom of a disease.

(b) Antibiotics are given to a patient to help in killing the microbes that have been causing the fever.

Q42. (a) What causes malaria? (b) Give two ways to prevent it.

Ans.

(a) Malaria is caused by a protozoa called Plasmodium.

(b) Two ways to prevent malaria are :

1. Getting rid of mosquito breeding grounds. i.e. standing water.
2. Using mosquito repellents.

Q43. (a) What causes chickenpox? (b) State a few precautionary measures for it.

Ans.

(a) Chicken pox is caused by a virus called varicella-zoster virus.

(b) Some precautionary steps for chicken pox are :-

- Affected person should avoid direct contact with people.
- The infected person's clothes should be soaked in boiling water before washing so as to kill the virus.
- Take the vaccination.