Why Do We Fall Ill ?

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Solution SAQ – 1:

Healthy:

1. It is a state of complete physical, mental and social well being.
2. A healthy person will be disease free.

Disease Free:

1. It is a state of absence of discomfort or derangement in any part of body.
2. A disease free person can be healthy or unhealthy.

Solution SAQ – 2:

There are many types of health problems that can possibly arise after disaster such as victims of disaster might suffer from lack of nourishment due to inadequate food.
The immediate health problems after disaster includes suffering of trapped people, people may suffer from fractures, burns and asthma due to dust particles arising from buildings.
Contaminated water can also cause other health issues.

Solution SAQ – 3

The provisions made by local authorities was to allocate funds and guide investments, encourage research, develop human resources through training and other capacity-building efforts, promote water quality monitoring, provide guidelines for various programmes and ensure the implementation of the water supply programmes.

Solution SAQ – 4

There are many provisions provided by local authorities for solid waste management. These are followings:
(i) Sweeping
(ii) Collection
(iii) Vermi-composting
(iv) Recycling system
(v) Transportation system
(vi) Power generation and
(vii) Dumping

Solution SAQ – 5:

Symptoms:

1. They indicate the presence of disease.
2. Symptoms are a collective indication of a number of diseases in a particular part or organ.

Signs:
1. They provide information about the presence of particular disease.
2. They are distinct for different diseases.

Solution SAQ – 6:

Casual organisms of the following diseases:
(i) Tuberculosis – Mycobacterium tuberculosis
(ii) Kala-azar – Leishmania (protozoa)
(iii) Malaria – Plasmodium
(iv) Measles – Virus
(v) Athlete's foot – Fungi
(vi) Cholera – Vibrio Cholerae

Solution SAQ – 7:

Two means of physical contacts by which AIDS does not spread are handshakes and hugs.

Solution SAQ – 8

A vector is a carrier (mosquito, tick) that takes the disease from an infected individual to an uninfected individual. They do not have the disease themselves; they carry the infected agent such as blood. A reservoir is anything (person, animal, arthropod, plant, soil or substance) in which a disease lives and can multiply. The disease needs the reservoir in order to survive. A vector must be living but a reservoir can be a living or a non living thing such as soil or water. Vectors or carriers are not pathogenic but are simply transmitters.

Solution SAQ – 9

Organ Specific Manifestation- These are the diseases caused in the same organ or organ system as the point of entry of the microbe. E.g. Tuberculosis which enters through the nose and affects the lungs. (Both are organs of the respiratory system)
Tissue Specific Manifestation- These are the diseases caused in a different organ as the point of entry. E.g. Japanese Encephalitis which enters through the blood but affects the brain.

Solution SAQ – 10

There are many possible areas, organs and tissues within our body where microbes may reside. However the severity of disease symptoms depends on the number of microbes in the body. For example, if the number of microbes is very small, then the symptoms of disease will be minor or unnoticed. However, if the numbers are large, the disease can be severe enough to be life-risking.

Solution SAQ – 11

Infection of HIV is found to have multiple dimensional effects. In case of HIV infection, the virus goes to immune system and ultimately damages its function. Thus many symptoms of HIV – AIDS infection are due to the fact that patients body no longer fight off many minor infections that he/she faces everyday.

Solution SAQ – 12

There are two ways to treat an infectious disease. One is to reduce the effects of the disease and the other way is to kill the cause of the disease.
For example, we can take the medicines that bring down the fever, reduce pain or loose motions. We can take bed rest so that we can converse our energy. This exercise will enable us to focus on the healing. However it will not make the pathogen to go away, so the disease will not be cured. For that we have to kill the microbe.

Solution SAQ – 13

Prevention is better than cure as a disease always cause some damage to the body, loss of working days, besides expenditure on medication. The important precautions for preventing occurrence of diseases include (i) hygienic environment; (ii) personal hygiene; (iii) proper nutrition; (iv) clean food; (v) clean water; (vi) regular exercise and (vii) adequate relaxation. Everybody should also be aware of diseases and their mode of spreading (epidemic). A regular medical checkup is also earnestly required to stay healthy.

Solution SAQ – 14

Vaccines help a body's immune system prepare in advance to fight infectious illnesses and potentially deadly diseases caused by infectious agents or their by-products. Vaccines work on the principle of immunization. During vaccination, when the immune system first encounters an infectious microbe, it responds against it and then remembers it specifically. So the next time that particular microbe, or its close relatives enter the body, the immune system responds with greater vigour. This eliminates the infection even more quickly than the first occurrence of the disease.

Solution SAQ – 15

Three diseases caused by Bacteria are: Tuberculosis (T.B.), Cholera and Typhoid.
Three diseases caused by Virus are: – Influenza, Jaundice and AIDS.

Solution SAQ – 16

The diarrhoea spreads through infection by contaminated food, water, drinks, hands, clothes etc. During diarrhoea frequent loose motions and vomiting leads to dehydration.
To control the dehydration during diarrhoea; Saline drip may be given intravenously to maintain fluid and electrolytes in the body. Alternatively oral rehydration Solution (ORS) may be

given to the patient periodically.

Solution SAQ – 17

Stagnant water (of pools, ponds) in the locality is the habitat of larvae of many types of mosquitoes and they are the vector of a disease, called malaria.
Doctor confirms malaria if the patients have following symptoms: headache, nausea, muscular pain and high fever. Doctor also checks the presence of malarial parasite in the human body by blood test.

Solution SAQ – 18

Methods of prevention of Malaria:
(i) Wire-gauze should be used on doors and windows of houses to prevent entry of mosquitoes.
(ii) One should sleep under mosquito nets.
(iii) Insect-repellents should be used to prevent mosquito-bite.
(iv) Mosquito larvae can be killed by sprinkling kerosene oil on large-sized water bodies.

Solution SAQ – 19

The person having AIDS lose the power of fighting any infection. The disease of AIDS is caused by retrovirus (a RNA virus) known as Human Immunodeficiency Virus (HIV).
AIDS disease spreads among human beings in the following ways:
(i) The AIDS usually spreads through unprotected sexual contacts with an infected person carrying AIDS virus.
(ii) It also spreads through the transfusion of blood contaminated with an AIDS virus.
(iii) It also spreads through the use of infected needles for injections.
(iv) An AIDS infected mother can transmit the virus to her child during pregnancy or during birth.

Solution SAQ – 20

Diarrhoea is an abnormally frequent discharge of semisolid or fluid faeces. It spreads through infection by contaminated food, water, drinks, hands, clothes, bed sheets and utensils.

Symptoms of Diarrhoea:
(i) Decreased appetite, nausea, vomiting and abdominal cramps.
(ii) There may be blood and mucus in the stools.

Prevention:
(i) Eatables should be covered to prevent their contamination.
(ii) Fruits and vegetable should be properly washed before use.
(iii) Stale food should not be consumed.

Control:
(i) Complete bed rest should be ensured till the illness is fully controlled.
(ii) For treating diarrhoea anti-microbial drugs and anti-diarrhoea agents should be used.

Solution SAQ – 21

In rabies, the patient feels restless, does excessive salivation, has a choking feeling and finds difficulty in the intake of even liquid food. Since patient develops fear of water, the disease is called hydrophobia.

Solution SAQ – 22

Pulse Polio Programme – Pulse polio immunization programme forms the largest single day public health project. Pulse means a dose of a substance (here polio vaccine) especially when applied for a short period of time. It was conducted for the first time in 1995. The program uses oral polio vaccine or OPV. As per the National Immunization Schedule (NIS), a dose of 3 drops is given orally to the child, i.e. one dose each at 1.5, 2.5 and 3.5 month's age. Finally a booster dose is given at the age of 1.5 years. After oral administration, virus particles in the vaccine begin to live in the intestine of the human body and multiply. It leads to production of protective molecules in the intestine and the blood.

Solution LAQ – 1

Human beings live in societies. Our social environment therefore plays an important role in our individual health. In villages, towns or cities, our physical environment is decided by our social environment. For example – if there are heaps of garbage and trash littered here and there, or if there is open drain water lying stagnant around where we live, the possibility of poor health increases. So, public cleanliness is an important contribution to an individual's health.
Some other community issues that influence health are:
Community issues like child marriage can affect the health of the girl the baby born to an underage girl.
Lack of education of the community to sex related issues can also cause sexually transmitted diseases.
Bad treatment with the underprivileged sections of the society can also cause mental problems.
Social equality and harmonious relationships among our population are necessary for the individual health. Thus, we see that there is an overlap of personal and community issues for health.

Solution LAQ – 2

Infectious diseases spread from one infected person to other normal person by various methods.

(a) Air-borne diseases – For example: common cold, pneumonia and tuberculosis. Such disease causing microbes are spread throughout the air. The transmission of these microbes occurs

through the little droplets coughed out by an infected person who sneezes or coughs. A person in the vicinity of such a person can inhale these disease causing microbes and may become infected.

(b)Water-borne diseases – For example: Cholera, Infectious diseases can also spread through water. These occur when a stool from someone suffering from an infectious gut disease, such as cholera or amoebiasis, gets mixed with the drinking water used by people living nearby. The cholera-infested bacteria can enter new hosts through the water they drink and can cause disease in them.

(c) Sexually-transmitted diseases – For example: Syphilis and AIDS. Both of these pathogens are transmitted by sexual contact from one partner to the other. However, such sexually transmitted diseases are not spread by casual physical contact.

(e) Formite borne diseases – Articles coming in contact with the patients act as sources of infection. For example: door handles, taps, garments, utensils, crockery, etc.

(f) Spread of disease through vectors – Many animals which live with us may carry diseases. These animals can transfer infecting agents from a sick person to another potential host. Thus, these animals act as intermediaries or vectors. For example – female Anopheles mosquitos are vectors of disease, malaria.

Solution LAQ – 3

General ways of preventing infection are:
Public hygiene is one basic key to the prevention of infectious diseases.
In the method of prevention of diseases, following practices are adopted:
(i) To avoid exposure to air-borne microbes, adopt living conditions that are not overcrowded.
(ii) To prevent exposure to water-borne microbes, safe drinking water should be provided.
(iii) To avoid vector-borne infections, we can provide clean environment as it would not allow mosquito breeding.

Solution LAQ – 4

Principle of Treatment:
There are two ways to treat an infectious disease. One is to reduce the effects of the disease and the other way is to kill the cause of the disease. For the first requirement, we can provide treatments that will reduce the symptoms. The symptoms are usually a result of inflammation. For example, we can take medicines that bring down fever, reduce pain or loose motions. We can take bed rest so that we can converse our energy.
However such a kind of symptom-directed treatment by itself is inadequate. Since it will not make the pathogen go away, so the disease will not be cured. For that we have to kill the microbe itself.

Solution LAQ – 5

(a) AIDS – AIDS stands for Acquired Immuno Deficiency Syndrome. It is a fatal disease. The disease of AIDS is caused by retrovirus (a RNA virus) known as Human Immunodeficiency Virus (HIV). AIDS virus attacks white blood cells (WBCs) or lymphocytes of human beings and weakens the human body's immunity or self-defence mechanism.
Some important symptoms of AIDS are: Swollen lymph nodes, regular fever, sweating at night and weight loss. Its virus also cause severe damage to brain and may lead to loss of memory, ability to speak and of clear thinking.

(b) Malaria – Malaria is caused by a protozoan parasite Plasmodium. This disease spreads through the bite of an insect vector – the female Anopheles mosquito which feeds on human blood. Male Anopheles mosquito feeds upon plant juice. Main symptoms of malaria include headache, nausea, muscular pain and high fever. Malarial attack consists of three stages:
(i) Cold stage, feeling of extreme cold and shivers.
(ii) Hot stage, high fever, faster respiration and heart beat.
(iii) Sweating stage, due to profuse sweating, temperature of the body goes down to normal.

Solution LAQ – 6

Few diseases caused by bacteria are:
(i) Tuberculosis (T.B.) – T.B. is an infectious disease which is communicated from one person to another directly or indirectly. It is caused by the bacterium called Mycobacterium tuberculosis. T.B. can affect all parts of the body such as lungs, lymph glands, bones, intestine etc.
(ii) Cholera – Cholera is an acutely infectious, fatal disease and is more common during overcrowded fairs, festivals and after floods. Cholera is caused by the bacterium Vibrio Cholerae. It is transmitted by flies, contaminated water and food.
(iii) Typhoid – Typhoid is most common communicable disease in India. Typhoid fever is common in humans of the age 1to 15 years age group. Typhoid is caused by a rod-shaped and motile bacterium, called Salmonella typhi which is commonly found in the intestine of human beings. Human infection is direct.
(iv) Diarrhoea – Diarrhoea is an abnormally frequent discharge of semisolid or fluid faeces. The diarrhoea spreads through infection by contaminated food, water, drinks, hands, clothes, etc. The causative agents of diarrhoea are mainly bacteria such as Escherichia coli, Clostridium botulinum, Shigella dysentiriae, Campylobacter jejuri and Salmonella.

Solution LAQ – 7

Important viral diseases of human beings are:
(i) Influenza – Influenza is commonly called flu. It is caused by an influenza virus (Myxovirus influenza). There exist three types of influenza viruses – A, B and C. A and B types of influenza viruses are important because these are responsible for causing of disease epidemics

throughout the world. The inhaled virus attacks the epithelial cells in the mucous membrane of nose, throat and upper respiratory tract. Influenza is spread mainly from person to person contact and by droplet infection via sneezing, coughing and talking.

(ii) Jaundice – Jaundice or hepatitis is the disease of liver. Since liver is a very important organ in the body, so its inflammation due to jaundice affects digestion adversely. Jaundice is caused by viral infection. The types of hepatitis are: Hepatitis A, Hepatitis B, Hepatitis C, Hepatitis D, Hepatitis E or Hepatitis G. Except for type B which is a DNA virus, all the other are RNA viruses. Hepatitis is spread
mostly by food and water contaminated with hepatitis virus.

(iii) AIDS – AIDS stands for Acquired Immuno Deficiency Syndrome. It is a fatal disease. The disease of AIDS is caused by retrovirus (a RNA virus) known as Human Immunodeficiency Virus (HIV). AIDS virus attacks white blood cells (WBCs) or lymphocytes of human beings and weakens the human body's immunity or self-defence mechanism. AIDS becomes prone to many other infections or diseases.

(iv) Polio – Poliomyelitis or polio is a disease of the nervous system caused by one of the smallest known virus, called polio virus. The virus enters the body through the food and water and reaches the intestine and from there it enters the CNS or central nervous system via blood stream and lymphatic systems. Children between the age of 6 months to 3 years are most prone to polio infection. Polio is transmitted among children by the faeco-oral route and through the direct contact, dirty hands, contaminated food or milk and flies.

Solution LAQ – 8

(a) Tuberculosis – T.B. is an infectious disease which is communicated from one person to another directly or indirectly. It is caused by the bacterium called Mycobacterium tuberculosis. T.B. can affect all parts of the body such as lungs, lymph glands, bones, intestine etc. The incubation period of T.B. includes a few weeks to a few years.
The patient of tuberculosis feels sick and weak. There is a loss of appetite and weight. Typical fever pattern and night sweats are also common.

(b) Polio – Poliomyelitis or polio is a disease of the nervous system caused by one of the smallest known virus, called polio virus. The virus enters the body through the food and water and reaches the intestine and from there it enters the CNS or central nervous system via blood stream and lymphatic systems. Children between the age of 6 months to 3 years are most prone to polio infection. Polio is transmitted among children by the faeco-oral route and through the direct contact, dirty hands, contaminated food or milk and flies.
The early symptoms of the polio disease are sore throat and headache.