CHAPTER 13

Why Do We Fall Ill

EXAM DRILL

ANSWERS

1. **(c) :** Typhoid is a bacterial disease caused by *Salmonella typhi*.

OR

(d) : Influenza is a viral disease caused by orthomyxovirus whereas cholera, tuberculosis and anthrax are bacterial diseases.

2. **(c) :** By sneezing, an infected person releases droplets which carry the disease-causing microorganisms. These disease-causing microorganisms are inhaled by a healthy person when he/she comes in contact with an infected person.

OR

(c) : In overcrowded and poorly ventilated condition, the air borne diseases are likely to spread rapidly. This is because infectious microbes that cause common cold, tuberculosis, pneumonia, etc., can spread through air from infected persons.

3. **(a) :** Jaundice, is an acute disease of liver. It is caused by viral infection and is spread mostly by contaminated food and water.

4. **(a) :** Cancer is a non-communicable disease. It is caused by an uncontrolled growth of certain tissues. Tuberculosis, cholera and malaria can be transmitted from an infected person to healthy person.

5. **(d)**

6. **(d) :** Kala-azar or dum-dum fever is a protozoan disease. It is caused by *Leishmania donovani* and transmitted through the bite of sand fly.

7. **(c) :** Antihistamines are used to reduce the inflammatory reactions because inflammation is generally caused by histamines.

8. AIDS can be transmitted through sexual intercourse, use of contaminated syringes as well as by transfusion of contaminated blood.

9. Vitamin A

10. Antibiotics are chemical substances secreted by microorganisms which can kill bacteria, *e.g.*, streptomycin.

OR

HIV virus causing AIDS destroys the immune system of the host's body. A person suffering from AIDS fails to resist bacterial and viral infections, hence he becomes sick frequently.

11(i) Shiela's mother told her not to eat the uncovered food because they carry a higher risk of contamination from environmental factors such as dirt, traffic, insects, animals, etc.

11(ii) Cholera, Diarrhoea

11(iii) *Vibrio cholera, E.coli*, etc.

11(iv) Pathogens stick to bodies of carriers like houseflies when they sit on garbage or animal excreta and may transfer the pathogens when they sit on the uncovered food and thus contaminate the food.

12(i) Raju won't be infected with the virus of chicken pox again means he already had it once and hence become immune to it. When the immune system first encounters an infectious microbe, it responds against it and then remembers it specially. So, when next time that particular microbe enters into the body, the immune system responds with great vigour and eliminates infection more quickly.

12(ii) Varicella zoster

12(iii) **(d) :** Swelling of parotid glands is the symptom of mumps.

12(iv) Viruses of chicken pox transmit through the droplets of the infected person.

13. **(d) :** Measles and cholera both are viral diseases.

14. **(b)**

15. Differences between infectious and non-infectious diseases are :

S. No.	Infectious diseases	Non-infectious diseases
(i)	These occur due to external (extrinsic) factors.	These generally occur due to internal (intrinsic) factors.

(ii)	These are caused by the attack of pathogens (viruses, bacteria, fungi, protozoans, worms).	These are caused by factors other than living pathogens.
(iii)	These can spread from an infected person to healthy person(s).	These cannot spread from an infected person to healthy person (s).
(iv)	Infection is transmitted through direct contact (physical contact, sexual contact) or through medium (air, water, food, insects, etc.), *e.g.*, *Influenza*.	Infection is not transmitted through direct contact or through medium except hereditary diseases where it passes from parent to offspring, *e.g.*, cancer.

OR

Differences between 'healthy' and 'disease-free' are :

S. No.	Healthy	Disease-free
(i)	It is a state of physical, mental and social well being.	It is a state of absence of discomfort or derangement in any part of the body.
(ii)	It refers not only to the individual but also its social and community environment.	It refers to the individual only.
(iii)	A 'healthy' individual is one who is energetic and is able to perform normal under given situation.	A 'disease - free' individual may have good health or poor health.
(iv)	A healthy person will be disease free.	A disease-free person can be healthy or unhealthy.

16. Inflammation is the vital part of immune system's response to injury and infection. It is the body's way of signaling the immune system to heal and repair damaged tissue as well as defend itself against pathogens such as bacteria, viruses, etc. During infection, the active immune system starts recruiting many cells to the affected tissue to kill the disease causing microbes. This recruitment process of active immune system is called inflammation. Inflammation results in some social effects such as swelling, pain and fever.

17. Vaccine is a preparation of weakened or dead pathogens which on inoculation into a healthy person provides temporary/permanent immunity against the diseases by inducing antibodies formation.

When vaccines are injected into a healthy person's body, the immune system responds and remembers specifically these pathogens. When these particular microbes re-enter our body, the immune system recognises and responds with even greater vigour and eliminates the infection quickly. Vaccine helps to develop a memory for a particular infection.

18. Three ways by which AIDS gets communicated are :

(i) Unprotected sexual intercourse with an infected person.

(ii) Use of contaminated needles and syringes to inject drugs or vaccines.

(iii) Transfusion of infected blood or blood products.

OR

The signs and symptoms of a disease will depend upon the tissue or organ which the microbe targets. If the brain is the target, we will observe severe headache, vomiting, fits or unconsciousness. If the lungs are the target, the symptoms will be cough and breathlessness. When the liver is targeted there will be jaundice. If the lymph nodes are targeted, the lymphocyte production may go down. If alimentary canal is targeted by the worms, loss of appetite and abdominal pain may take place.

19. Malaria is caused by a protozoan, *Plasmodium*. The infective stage of this disease is transmitted through the bite of the female *Anopheles* mosquito. The incubation period is about three weeks. The parasite grows and multiplies in the red blood cells and destroys them.

The symptoms of malaria are as follows :

(i) Headache, nausea, muscular pain along with high fever.

(ii) Chill and high fever repeated on the third or fourth day.

Control measures include destruction of the mosquito at all stages, usage of mosquito net and repellents. Patients are treated with drugs like quinine, primaquin, etc.

20. Bacterial disease – Whooping cough or pertussis, caused by *Bordetella pertussis*. The symptoms of whooping cough are cough, breathlessness and vomiting. It can be prevented by taking vaccine (DPT) or drugs such as erythromycin against it.

Protozoan disease – Amoebiasis, caused by *Entamoeba histolytica*. Its main symptoms include abdominal pain, diarrhoea, blood in faeces and passing of the mucus.

It can be controlled by maintaining proper sanitation, protection of food from flies. Drugs such as emetine, metronidazole, etc can be taken.

OR

Various preventive measures to cure infectious diseases are :

(i) Maintaining proper sanitation in our surroundings.

(ii) Patient suffering from infectious disease should be kept in isolation.

(iii) The belongings and articles of the infected patient should be sterilised.

21. (i) Diarrhoea – It can be transmitted through contaminated food and drinks.

(ii) Hepatitis – It can be transmitted by ingestion of contaminated water, food or milk.

22. Acute diseases last for very short period of time *e.g.*, cold, fever, etc. whereas chronic diseases last for long time, even may be lifetime. *E.g.*, elephantiasis, cancer, etc.

Chronic diseases are more harmful as they last for a long time and person suffering from these diseases have very drastic long-term effects on his health.

23. Immunisation is the process of stimulating the body to produce antibodies by injecting vaccines against certain diseases.

It is important to immunise children as it is an effective way of protecting children from serious diseases. It gives immunity to child and protect them from various harmful infectious diseases.

24. The three limitations are :

(i) If someone has a disease, their body functions are damaged and may never recover completely.

(ii) As the treatment will take time, the person suffering from a disease is likely to be bedridden for some time.

(iii) The infectious person can serve as the source from where the infection may spread to other people.

25. **(a)** (i) Tuberculosis is a highly infectious disease as it can be communicated from one person to other directly or indirectly. It can also be communicated from animals (*e.g.*, cattle). It is caused by bacterium *Mycobacterium tuberculosis*, that releases a toxin, tuberculin which can affect all parts of body such as lungs, lymph glands, bones, etc.

(ii) The various measures that should be taken to control TB (Tuberculosis) are as follows :

– Use of anti tubercular therapy (ATT)
– Use of drugs such as rifampicin, streptomycin, etc.

(b) It is important to prevent disease because :

– For proper functioning of the cells, tissues and organs which will lead to proper activities of the body.
– Reduces the expenses of medications and healthcare.
– Lethal diseases such as cancer, AIDS may even lead to death.

OR

Vaccine is a preparation of weakened or dead pathogens which on inoculation into a healthy person provides temporary/permanent immunity against the diseases by inducing antibody formation.

When vaccines are injected into a healthy person's body, the immune system responds and remembers specially these pathogens. When these particular microbes re-enter our body, the immune system recognises and responds with even greater vigour and eliminates the infection quickly. Vaccine helps to develop a memory for a particular infection.

Two diseases that can be prevented by vaccination in children are poliomyelitis and hepatitis B.

26. **(a)** The common preventive measures against communicable diseases are :

(i) Eradication of vectors and carriers.
(ii) Immunisation (vaccination).
(iii) Proper and safe water supply.
(iv) Personal and community hygiene
(v) Sterilisation of articles used by the patients.
(vi) Health education.

(b) (i) *Helicobacter pylori*, (ii) Marshal and Warren

27. **(a)** Immunity means the resistance power of the body to diseases. It is due to the production of antibodies in our body against the disease-causing microorganisms known as antigens. When these antigens enter our body, antibodies are formed which prevent the disease.

Natural immunity or non-specific immunity is that which is present naturally or the individual is born with. It includes different types of barriers.

In acquired immunity a person produces, antibodies for particular disease-causing antigens.

(b) Deficiency diseases are caused due to deficiency of certain nutrients in our diet like proteins, minerals and vitamins. It is a type of non-communicable disease. Examples: Kwashiorkor, marasmus, anaemia, etc.

OR

(a) Differences between acute and chronic diseases are as follows :

S.No.	Acute disease	Chronic disease
(i)	These last for only short period.	These last for long time, even for lifetime.
(ii)	These do not cause long term bad effects. Examples – cough, typhoid.	These cause drastic long term effects on human health. Examples – tuberculosis, arthritis.

(b) Balanced diet is necessary for maintaining healthy body because it contains all the nutrients such as carbohydrates, fats, vitamins, minerals and proteins in appropriate amounts. Balanced diet is required for maintaining proper health, growth and repair. It helps in fighting against diseases.

28. Disruption in the functioning of a tissue, organ or organ system resulting in discomfort is referred to as disease.

Human diseases can be classified in different ways :

(i) Acute and chronic diseases

Acute diseases : These are short duration diseases in which normal activity of the person is impaired for a few days. These diseases do not have a long term effect on the affected individual. Examples—common cold, typhoid, diarrhoea, etc.

Chronic diseases : These are long duration diseases which last for a long time, even as much as a lifetime. These cause long term effects on human health. Examples—elephantiasis, diabetes, arthritis, etc.

(ii) Infectious and non-infectious diseases

Infectious (or communicable) diseases : These diseases are caused by pathogens such as bacteria, viruses, protozoans, etc. and spread from diseased person to the healthy person by means of air, food, water, vectors, physical contact etc. Examples—tuberculosis, chicken-pox, dengue, etc.

Non-infectious (or non-communicable) diseases : These diseases remain confined to the person who develops them and do not spread to others. These may be caused by deficiency of nutrients, imbalance of hormones, malfunctioning of some organs or of immune system, etc. Examples—epilepsy, allergy, goitre, marasmus, etc.

29. **(a)** Immune system is essential for our health as it responses against foreign invaders such as bacteria, fungi, protozoans, etc. and produce antibodies against them. The immune system consist of cells that are specialised to kill the infecting microbes and protect from diseases.

(b) For a healthy person it is necessary that :

(i) The surrounding environment should be clean. Air and water-brone diseases should not spread.

(ii) Personal hygiene should be maintained to prevent infectious diseases.

(iii) Proper, sufficient nourishment and food should be available for good immune system of the body.

(iv) Body should be immunised against severe diseases.

30. **(a)** Following are the common symptoms of malaria :

(i) Sudden appearance of fever with pain and sensation of cold shivering.

(ii) Body temperature rises up to 106 °F and patient becomes burning hot. Patient experiences intense headache, faster breathing rate and heart beat.

(iii) Fever later comes down with profuse sweating. This occurs either daily at a particular time or is repeated every third or fourth day depending upon the species of the parasite.

(iv) Enlargement of spleen and anaemia occurs.

(b) (i) Chronic diseases are more harmful because chronic diseases have drastic long term effect on people's health as compared to acute disease.

(ii) It is advisable to take bland and nourishing food because :

- It does not contain oil or fat and spices so it is digested easily.
- It provides sufficient energy for recovery after the disease.
- It provides adequate amount of nutrients required for regeneration of cells and tissues.

OR

(a) Symptoms are evidences of disease or physical disturbances, something that indicates presence of bodily disorders. It indicate that there may be a disease, but do not indicate what the disease is. Sign of a disease is a definite indication of the presence of a particular disease. Physicians get laboratory test done to pinpoint the disease.

(b) Incubation period is the period between the entry of germs and the appearance of the first symptoms of the disease.

Malaria – 3 weeks

Chicken pox – 14-21 days

Tuberculosis – 3-6 weeks

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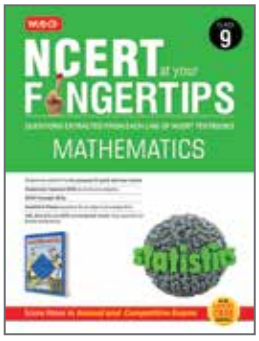

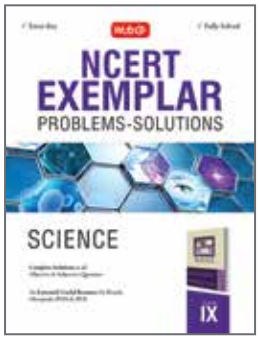

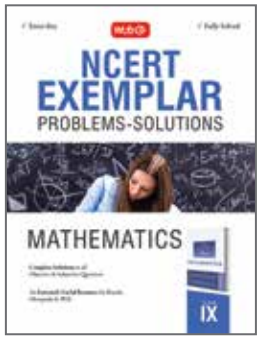

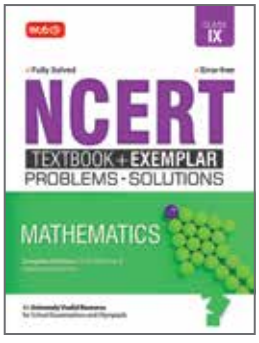

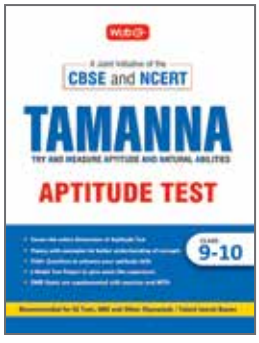

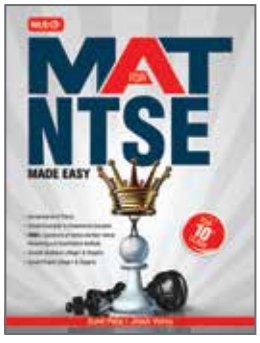

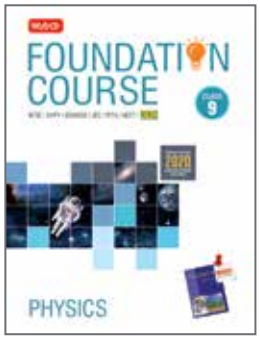

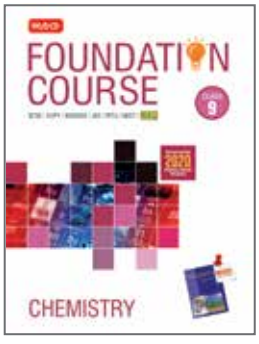

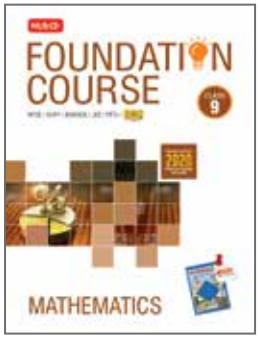

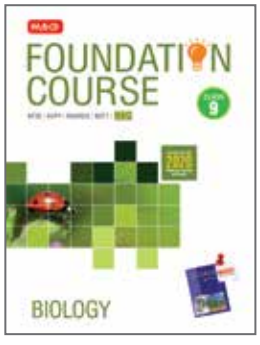

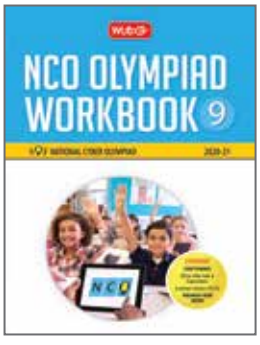

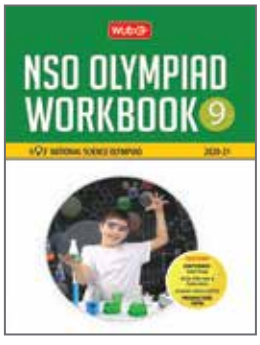

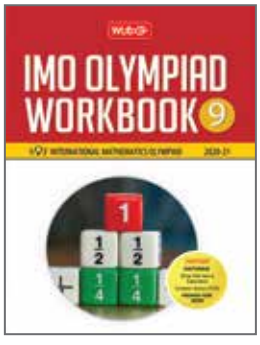

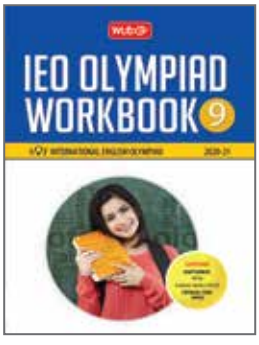

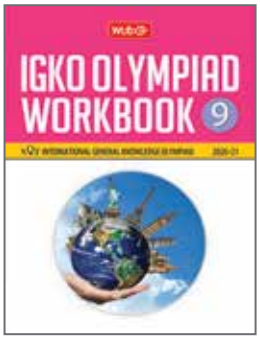

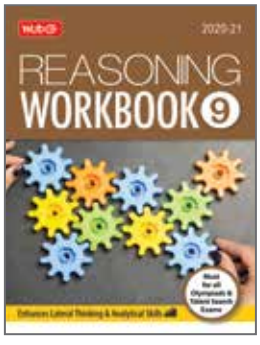

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