

## Allergy

### Question 1.

Define the term "allergy".

#### Answer:

Allergies, also known as allergic diseases, are a number of conditions caused by hypersensitivity of the immune system to something in the environment that usually causes no adverse effects to most people. These diseases include hay fever, dermatitis, asthma, food allergies, etc.

### Question 2.

Name the inflammatory chemical released by the basophils causing skin reaction and constriction of the bronchioles.

#### Answer:

The histamine causes inflammation, skin rash and constriction of the bronchioles (as in asthma).

### Question 3.

How the allergy causing chemical is naturally removed from the body ?

#### Answer:

There are no permanent cure for an allergy. Medication for allergies do give relief. Those people prone to allergic reactions should be aware of the allergens that trigger these responses in their bodies and avoid them completely, especially food and medicines. Allergy shots are helpful to those with seasonal allergies like those caused by pollen.

### 4. Match the items given under column I with those given under column II.

column I

column II

(i) Dust allergy

(a) Nuts

(ii) Food allergy

(b) Pollen

(iii) Seasonal allergy

(c) Asthma

#### Answer:

column I

column II

- |                        |            |
|------------------------|------------|
| (i) Dust allergy       | (c) Asthma |
| (ii) Food allergy      | (a) Nuts   |
| (iii) Seasonal allergy | (b) Pollen |

**Question 5.**

Name any three routes of which allergens normally enter in our body.

**Answer:**

1. **Skin** — Substances that come into contact with the skin, such as latex, are also common causes of allergic reactions, known as contact dermatitis or eczema.
2. **Mouth** — A wide variety of foods can cause allergic reactions, but 90% of allergic responses to foods are caused by cow's milk, soy, eggs, wheat, peanuts, tree nuts, fish and shellfish.
3. **Nose** — Pollen, spores, dust particles and certain chemicals find entry through the nose.

**Question 6.**

What are allergens ? Name any three allergens.

**Answer:**

The substances that cause allergies are called allergens.

1. Dust particles
2. Nuts
3. Pollen

**Question 7.**

Name the two tests generally used to diagnose allergy and describe any one of them.

**Answer:**

1. **Prick Test**—Skin prick test is also known as “puncture testing” or “prick testing” due to the series of tiny punctures or pricks made into the patients skin. A small plastic or metal device is used to puncture or prick the skin. Sometimes, the allergens are injected intradermally into the patients skin, with a needle and syringe. Small amounts of suspended allergens or their extracts (e.g., pollen grain, insect sting proteins, peanut extracts) are introduced to sites on the skin marked with pen or dye. Common areas for testing include the inside of forearm and the back.
2. **Blood Testing** — A sample of the patient's blood is sent to a laboratory for analysis. Multiple allergence can be detected with a single blood sample. The test measures the concentration of specific antibodies in the blood. The quantitative allergy blood result can help determine what a patient is allergic to, help predict and follow the disease development, estimate the risk of a severe reaction, and explain cross-reactivity.

### Question 8.

Which test is mostly favoured for testing allergy, prick test or blood test ? Why ?

**Answer:**

**Blood test is mostly favoured for testing allergy.**

**Blood Testing** — A sample of the patient's blood is sent to a laboratory for analysis. Multiple allergence can be detected with a single blood sample.

The test measures the concentration of specific antibodies in the blood. The quantitative allergy blood result can help determine what a patient is allergic to, help predict and follow the disease development, estimate the risk of a severe reaction, and explain cross-reactivity.

### Additional Questions

**Multiple Choice questions :**

**1. Put a tick mark ( ✓ ) against the correct alternative in the following statements:**

**(a) Hay fever and asthma are**

- (i) Deficiency diseases
- (ii) Genetic diseases
- (iii) Organic diseases
- (iv) Allergy diseases**

**(b) Cataract is a disease of:**

- (i) Ears
- (ii) Nose
- (iii) Eyes**
- (iv) Throat

**(c) Infectious diseases can be prevented by:**

- (i) Medicines
- (ii) Proper food
- (iii) Immunisation**
- (iv) Exercise

**(d) Which one of the following is a genetic disease ?**

- (i) Scurvy
- (ii) Leukemia
- (iii) Goitre
- (iv) Haemophilia**

**(e) Which one of the following is a degenerative disease ?**

- (i) Thalassemia

- (ii) Beri-beri
- (iii) Cataract**
- (iv) Diabetes

**(f) Pellagra is one disease caused by the deficiency of:**

- (i) Vit.B3**
- (II) Vit.B1
- (iii) Vit. C
- (iv) Vit. D

**(g) Deficiency of Iodine in one's food can cause :**

- (i) Beri-beri
- (ii) Goitre**
- (iii) Scurvy
- (iv) Pellagra

### **Short Answer Questions:**

1. (a) What is a non-communicable disease ?

**Ans.** The diseases which are caused due to improper functioning of the body organs e.g. diabetes, heart attack. They are not caused by germs and not transmitted from one to another.

(b) What is a deficiency disease ?

**Ans.** These disease are caused by lack of nutrients, vitamins, minerals as a anaemia, goitre.

(c) What are communicable diseases ? How can they be avoided ?

**Ans.** Those disease which spread from one person to another by the entry of microorganisms are known as communicable diseases. The disease-causing germs are called Pathogens. These disease can be avoided by proper vaccination, healthy food and hygenic surroundings.

(d) Biting nails should be strictly avoided. Give reason.

**Ans.** Nail biting may cause many disease as the dirt has many bacteria causing diseases. Nails should be cut from time to time to save from diseases.

(e) Regular exercise and proper rest is a must. Give reason.

**Ans.** Regular exercise keeps our body strong and immune to many diseases, rest refreshes our body.

(f) Children eating more of fast food tend to suffer from obesity (overweight). Comment.

**Ans.** Fast food like pizza, burger, patty, oily foods etc. have much carbohydrates and

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fats. Children eating these become more and more fat and gain weight soon as they do not do much of physical work.

(g) Define the term “allergy”.

**Ans.** Allergies, also known as allergic diseases, are a number of conditions caused by hypersensitivity of the immune system to something in the environment that usually causes no adverse effects to most people. These diseases include hay fever, dermatitis, asthma, food allergies, etc.

(h) Name the inflammatory chemical released by the basophils causing skin reaction and constriction of the bronchioles.

**Ans.** The histamine causes inflammation, skin rash and constriction of the bronchioles (as in asthma).

(i) How the allergy causing chemical is naturally removed from the body ?

**Ans.** There are no permanent cure for an allergy. Medication for allergies do give relief. Those people prone to allergic reactions should be aware of the allergens that trigger these responses in their bodies and avoid them completely, especially food and medicines. Allergy shots are helpful to those with seasonal allergies like those caused by pollen.

**2. Name the following:**

1. A viral disease caused due to unhealthy sexual contact **AIDS.**
2. A bacterial disease caused due to contaminated water **Cholera.**
3. A disease caused due to Plasmodium **Malaria.**
4. A disease caused due to the bite of female Culex mosquito **Elephantiasis.**
5. A viral disease caused by the bite of a dog **Rabies/ Hydrophobia.**

**3. Write short (1-2 sentences) notes on the following:**

Disease, immunisation, allergy, AIDS.

**Answer:**

1. **Disease:** Disease is a departure from normal health due to structural or functional disorder of the body. Disease may be due to deficiency of nutrients or malfunctioning of organs or genetic disorders, improper metabolic activity, or allergies, or cancer and mental illness as diabetes, haemophilia, leukemia, schizophrenia.
2. **Immunisation :** It means, we make the body immune to certain diseases by introducing respective weakened germs into the body. Thus we develop resistance to the concerned disease this process is called immunisation. The germs or the material introduced into the body to make it resistant to the concerned disease is called vaccine. This produces antibodies in the body of the

person and the person can be saved by these antibodies. The vaccine can be given by the injection or orally as polio drops, tap vaccine for typhoid, BCG vaccine for tuberculosis.

3. **Allergy:** Allergy is an unpredictable reaction to a particular substance. This type of substance is called allergen. Different people are allergic to different substances. A few common allergens are dust, spores, pollen, certain clothes, particular cosmetics, etc. The common areas of the body parts which are affected by allergies are skin, respiratory and digestive tracts. Asthma, eczema, diarrhoea, vomiting, nausea, etc. are some of the common allergic reactions.
4. **AID'S: (Acquired Immune Deficiency Syndrome):** It is a viral disease caused by the virus called HIV ( Human immuno deficiency virus) This virus makes the defence mechanism of the human body very weak. The immune system in the body as W.B.C. becomes weak. Thus the person catches the infectious diseases very easily. This disease spreads through sexual contact as one of the partner may be carrier of the disease. It may spread through the blood transfusion and infected syringes, blades of the barbers, it may infect the developing baby through the blood by the 108 7 mother. It is very deadly disease.

#### 4. Find the odd one out:

(a) Typhoid, cholera, jaundice, tuberculosis, tetanus.

**Ans.** Jaundice is odd one

(b) Cold, AIDS, plague, malaria, measles.

**Ans.** Malaria is odd one.

(c) Scurvy, rickets, haemophilia, pellagra, night blindness.

**Ans.** Haemophilia is odd one.

(d) Proteins, carbohydrates, fats, minerals, cancer.

**Ans.** Cancer is odd one.

#### Long Answer Questions:

##### Question 1.

What is vaccination ? Mention the four ways in which vaccine's are prepared, giving the name of one disease for which each type of vaccine is used.

##### Answer:

For developing resistance in the body we introduce germs or germ substances in the body to develop resistance in the body against a particular disease. The material introduced into the body is called vaccine, this practice is called prophylaxis.

The germ or the germ substance is put into the body orally as polio drops or it is introduced by injection as TAB vaccine. Vaccine or vaccination was attached with small

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pox, but it is now used in a general sense.

**Preparation:**

1. Killed germs are introduced into the body These act as vaccine for TAB, vaccine for typhoid, Salk's vaccine for poliomyelitis. Rabies vaccine for dog bite.
2. **Living weakened germs:** The living germs are treated in such a way that they become very weak and as such, they cannot cause the disease. They can induce antibody formation such as the vaccine for measles and the freeze-dried BCG vaccine for tuberculosis.
3. **Living fully virulent germs:** These virulent germs in small doses are introduced into the body as vaccine and these produce antibodies in the body and these do not allow the germs of particular type to cause that disease. In this vaccination the person is inoculated with cowpox virus. It is very similar to small pox virus.
4. **Toxoids :** Toxoids are prepared from the extracts of toxins secreted by bacteria. These toxins are poisons and these are made harmless by adding formalin into them. They retain their capacity and as a result when introduced into the body they produce antibodies into the body and do not allow the germs to grow in the body as vaccines for diphtheria and tetanus.

**Question 2.**

Name the tests generally used to diagnose allergy and describe any one of them.

**Answer:**

1. **Prick Test**—Skin prick test is also known as “puncture testing” or “prick testing” due to the series of tiny punctures or pricks made into the patient's skin. A small plastic or metal device is used to puncture or prick the skin. Sometimes, the allergens are injected intradermally into the patient's skin, with a needle and syringe. Small amounts of suspended allergens or their extracts (e.g., pollen grain, insect sting proteins, peanut extracts) are introduced to sites on the skin marked with pen or dye. Common areas for testing include the inside of forearm and the back.
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