

Antioxidants Chemistry Questions with Solutions

Q1. Which of the following is a rich source of antioxidants which fight disease?

- (a) Tea
- (b) Coffee
- (c) Water
- (d) None of the above

Answer: (b) Coffee is a rich source of antioxidants which fight disease.

Q2. Antioxidants fight against

- (a) Bacteria
- (b) Viruses
- (c) Free radicals
- (d) None of the above

Answer: (c) Antioxidants fight against free radicals.

Q3. A compound that inhibits oxidation is known as

- (a) Oxidising agent,
- (b) Antioxidant
- (c) Reductant
- (d) All of the above

Answer: (b) A compound that inhibits oxidation is known as an antioxidant.

Q4. Which element plays a significant role in human cell-mediated immunity and is also an antioxidant and anti-inflammatory agent?

- (a) Zinc
- (b) Magnesium
- (c) Calcium
- (d) None of the above

Answer: (a) Zinc plays a significant role in human cell-mediated immunity and is also an antioxidant and anti-inflammatory agent.

Q5. Which of the following is a naturally occurring antioxidant?

- (a) Hydroquinone
- (b) Vitamin E
- (c) Ascorbic acid
- (d) All of the above

Answer: (d) Hydroquinone, vitamin E, and ascorbic acid are naturally occurring antioxidants.

Q6. What is an antioxidant?

Answer: An antioxidant is a substance that delay, control or inhibit the oxidation process. When present in food, it protects the food from contamination. In the body, an antioxidant prevents cells from free radicals. High levels of free radicals can cause diabetes, heart disease, and cancer.

Q7. Give some examples of antioxidants?

Answer: Glutathione, ascorbic acid, vitamin E, selenium, beta-carotene, lycopene, lutein, and zeaxanthin are some examples of antioxidants.

Q8. What are the benefits of consuming antioxidants?

Answer: An antioxidant is a substance that delay, control or inhibit the oxidation process. There are a lot of health benefits of consuming antioxidants. A few of them are mentioned below.

1. Antioxidant reacts with highly reactive free radicals to form the corresponding compound and prevents us from diabetes, heart disease, and cancer.
2. Antioxidant-rich diet protects our eyes and brain and supports healthy ageing.
3. Antioxidants prevent us from oxidative stress.

Q9. Is coffee an antioxidant?

Answer: Yes, coffee is a potent antioxidant. It minimises the risk of cavities and improves athletic performance. Coffee also improves mood swings and fights against type 2 diabetes, liver cancer and Parkinson's disease.

Q10. Match the following.

Column I	Column II
Sucralose	Antacid
Iodine	Food preservative
Sodium benzoate	Antiseptic
Ranitidine	Artificial sweetener
Food colours	Ascorbic acid
Antioxidants	Caramel

Answer:

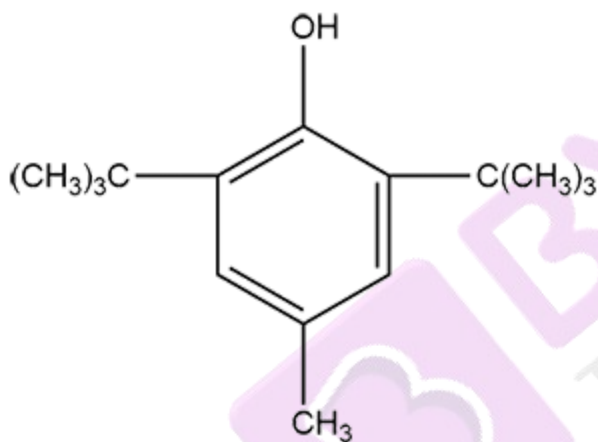
Column I	Column II
Sucralose	Artificial sweetener

Iodine	Antiseptic
Sodium benzoate	Food preservative
Ranitidine	Antacid
Food colours	Caramel
Antioxidants	Ascorbic acid

Q11. Draw the structure of any antioxidant.

Answer: BHT is an example of an antioxidant.

Structure of the BHT (An antioxidant)



Q12. Which of the following is an example of an antioxidant?

- (a) Saccharin
- (b) Butylated hydroxytoluene (BHT)
- (c) Butylated hydroxyanisole (BHA)
- (d) Both (b) and (c)

Answer: (d) Butylated hydroxytoluene (BHT), and butylated hydroxyanisole (BHA) are examples of antioxidants.

Q13. What is the role of potassium bisulphate?

Answer: Potassium bisulphate acts as a food preservative. It reacts with water to form sulphurous acid, which lowers the pH of the food, thereby hindering the growth of the viruses.

Q14. Explain the working of an antioxidant.

Answer: An antioxidant is a substance that delays, controls, or inhibits the cell's oxidation process. It is used to neutralise the free radicals in our bodies. High levels of free radicals can cause diabetes, oxidative stress, heart disease, and cancer.

Q15. Is EDTA an antioxidant?

Answer: Yes, EDTA is an essential antioxidant. It helps in decreasing oxidative stress, DNA damage and lipid peroxidation.

Practise Questions on Antioxidants

Q1. What is oxidation?

Answer: Oxidation is a process in which electrons are lost, oxygen is added, or hydrogen is removed during a reaction by a molecule, atom, or ion.

Example: $\text{Fe (s)} + \text{O}_2 \text{ (g)} \rightarrow \text{Fe}_2\text{O}_3 \text{ (g)}$

Q2. What is free radical?

Answer: A free radical is a highly unstable, very reactive specie comprising an atom or a group with an odd or unpaired electron. The presence of high levels of free radicals can cause diabetes, oxidative stress, heart disease, and cancer.

Q3. Which of the following is true about mould inhibition?

- (a) The quantity of Sorbic acid required for mould inhibition is one third the amount of sodium benzoate required
- (b) Propylene glycol and tri ethylene glycol have germicidal properties
- (c) Sorbic acid is used as a mould inhibitor in cheese
- (d) All of the above

Answer: (d) All the aforementioned facts are true about mould inhibition.

Q4. Which of the following is true about synergism?

- (a) When two or more antioxidants combine, a greater effect than a single antioxidant is produced. This is referred to as synergism
- (b) The mechanism of synergism depends on the nature of the synergist, the antioxidant and the fat
- (c) Synergists do not have antioxidant properties alone
- (d) All of the above

Answer: (d) All the facts mentioned above are true about synergism.

Q5. Which of the following is a naturally occurring antioxidant?

- (a) Vitamin C
- (b) Vitamin E
- (c) Hydroquinone
- (d) All of the above

Answer: (d) Vitamin C, Vitamin E, and hydroquinone are naturally occurring antioxidants.