



## **FAQ's**

### **Q No. 1: Define food science.**

**Ans. 1:** Food science is a discipline concerned with all technical aspects of food, beginning with harvesting or slaughtering and ending with cooking and consumption. Food science is the study of the physical, biological, and chemical makeup of food; the causes of food deterioration; and the concepts underlying food processing. It draws from many disciplines such as biology, chemical engineering, and biochemistry in an attempt to better understand food processes and ultimately improve food products for the public.

### **Q No. 2: What are the disciplines associated with the study of food?**

**Ans. 2:** The study of food associates various disciplines such as food science, food technology, food research, food processing, food safety, and food quality control.

### **Q No. 3: Briefly mention the roles food scientists are required to play.**

**Ans. 3:** Food scientists and technologists apply scientific disciplines including chemistry, engineering, microbiology, and nutrition to the study of food to improve the safety, nutrition, wholesomeness, and availability of food. Depending on their area of specialization, food scientists may develop ways to process, preserve, package, and/or store food according to industry and government specifications and regulations.

### **Q No. 4: Why is food science important?**

**Ans. 4:** Food science has proved to be equally important to other life sciences, as it has enabled availability of safe and wholesome food, promoted food sustainability and safety, health and longevity, and helped to meet the challenges associated with the growing and varying food centric concerns.

### **Q No. 5: Food Science is a blessing for all times. Justify this statement.**

**Ans. 5:** If it were claimed that food science is a blessing for the existence of human race, it would not form any exaggeration. Food is one of the necessities of life and the growing world population demands a sustainable supply of wholesome food with acceptable quality. Not only is food supply to be ensured, but the food meeting ever changing demands and needs of consumers is to be produced. This requires first a



thorough understanding of food and then the application of necessary knowledge and skills for meeting the requirements. A step further requires preservation and storage of food to ensure availability as and when needed. Furthermore, to add variety to the food, value addition and innovation is also needed. With the growing health consciousness and the concept of 'food as medicine', presenting of food as a commodity cutting the need of medicine has multiplied over time. While applying these concepts, the safety of food is also a major concern, to minimize the risk of running adulterations and malpractices with food, and conforming to the guidelines fixed by regulatory bodies. Thus, ensuring the supply of surplus, beneficial, innovated and safe food is a need today and tomorrow. All this is possible with the application of food science and associated disciplines of it and it can therefore be concluded that food science is no less than a blessing.

**Q No. 6: How are basic and allied sciences useful in shaping food sciences?**

**Ans. 6:** Basic and allied sciences have enabled to understand the nature of food, its composition, and how it behaves when subjected to different conditions. It has also been possible to develop different food processes and products with such understanding. For instance, chemistry helps to make food analysis possible and improve food quality. Biotechnology, for example, makes possible the enhancement of nutritional value of food exemplified by rice with an increased content of  $\beta$ -carotene.

**Q No. 7: What are the disciplines associated with food science?**

**Ans. 7:** Some of the disciplines associated with food science that bring about its complete development and application include:

Food chemistry, Food Analysis, Food Engineering, Food Packaging, Food Processing, Food Microbiology, and Sensory science.

**Q No. 8: By means of examples, explain the activities performed by food scientists.**

**Ans. 8:** Food scientists perform a myriad of jobs ranging from simple food preservation to adding value to the food. If a few examples are to be mentioned, it is pertinent to first emphasize that food scientists have been successful to produce the food aimed at improving health and preventing disease development. For this purpose, foods



with reduced caloric content, fat replacers, and enhanced nutraceutical value have been developed. Novel preservation and processing methods have been developed achieving food safety as well as maintaining the inherent compounds of importance in food. These people have also engaged in developing the laws and regulations governing food and operations associated with it.

**Q No. 9: How does IFT define food science?**

**Ans. 9:** IFT or Institute of Food Technologists is a global organization in Chicago, constituted of members from virtually every discipline related to food science and technology and dedicated to the global advancement of food science. They define food science as, “the discipline in which the engineering, biological, and physical sciences are used to study the nature of foods, the causes of deterioration, the principles underlying food processing, and the improvement of foods for the consuming public”.

**Q No. 10: Is there any relevance of computers in food sciences?**

**Ans. 10:** Computers play a very important role in food science in that they enable record keeping and data analysis. Nowadays, computers assume more advanced roles like in automation, modeling, and simulation of food processes.

**Q No. 11: What do you understand by food security?**

**Ans. 11:** According to the Food and Agriculture Organization (FAO), food security exists when all people, at all times, have physical and economic access to sufficient, safe, and nutritious food to meet their dietary needs and food preferences for an active and healthy life. In simple terms, it implies that the global population has availability of surplus, wholesome, and safe food.

**Q No. 12: Is food technology different from food science?**

**Ans. 12:** Food technology differs from food science in that it is the application of food science itself. It involves selection, preservation, processing, packaging, distribution, and use of safe food, whereas the science focuses more on the study of food.



**Q No. 13: What is the relevance of food engineering?**

**Ans. 13:** Food engineering involves the study of engineering concepts and unit operations used in food processing. Engineering principles including material and energy balances, thermodynamics, fluid flow, and heat and mass transfer are important in governing the food process operations, designing equipments, and predicting the properties of food materials subjected to processing.

**Q No. 14: How does food science help in promoting food security?**

**Ans. 14:** Food science as a discipline maintains the stability of food supply. Food science and allied disciplines have a role to play in food process innovation, food safety and quality improvement and an efficient supply chain development. This ultimately contributes to the availability of more and safe foods for a longer time. One example how food science improves food security is removing the food allergens through food processing. Another example where food science seems a major contributor is reducing the food wastage through improvement in food safety and quality as well as improved utilization.

**Q No. 15: What role does food science play in promoting health?**

**Ans. 15:** Food science promotes health by enabling the development of health-centric foods. It involves altering the composition of food to suit a particular need, for instance combating cardiovascular disease, or adding compounds to food that carry nutraceutical importance. Associated dimensions of food science, for instance food product development has made possible to tailor food properties as per needs of consumers.