Educational program ‘’FoodTech”- 2021: Entrance Exam Questions

1. Baker's yeast. Types, characteristics, process value and quality indicators.

2. Yeast cell structure. The main organelles and their functions. The role of yeast in biotechnological processes.

3. Dietary fiber, food sources, consumption rates. Main types, structure, properties, and role in digestion.

4. Starch. Structure and properties. Process value.

5. Mono - and disaccharides. Classification. Properties. Technological significance.

6. Animal proteins. Muscle proteins. Connective tissue proteins.

7. Plant proteins. Textures, concentrates, isolates. Neoprotein products.

8. Functions of proteins. Water- and fat-soluble proteins.

9. Proteinogenic amino acids. Essential amino acids. Amino-acid score.

10. Alternative sources of proteins. Falsification of protein-containing products.

11. Fats of animal and plant origin.

12. Water in food raw materials and products. Stuffing systems.

13. Thermal and refrigeration technologies in the agro-industrial complex.

14. Food raw materials of plant origin. Macro and micronutrients of food products.

15. Amino acid composition of plant proteins. Daily protein requirements for the human body.

16. Toxicants. Main ways and types of raw material and food product contamination. Food chains.

17. Chemical preservatives in food technology.

18. Plant products. Safety Indicators and criteria.

19. Biological and nutritional value.

20. Food additives. Functional and technological properties.

21. Concept of human nutritional status and ways of its correction.

22. Essential nutritional factors and their importance in human diets.

23. Biologically active substances of natural origin.

24. Energy value of the daily diet for various groups of population.

25. Current state of the art in food biotechnology and its development.

Food biotechnology. Current state of the art in and prospects.

26. Objects of biotechnology. Cell membrane, cell metabolism.

27. Microorganisms, their distribution. Value in food biotechnology.

28. Enzymes. Sources of enzymes. Classification. General properties.

29. Role of proteins and their breakdown products in nutrition. The most important functions of proteins. Protein intake rates.

30. Carbohydrates. Classification. Physiological value.

31. Carbohydrates in raw materials and food products.

32. Lipids. Physiological role of lipids in the human body. Simple and complex lipids.

33. Lipids of raw materials and food products.

34. Minerals. Roles of certain minerals for the human body.

35. Role of water- and fat-soluble vitamins in human nutrition.

36. Organic acids. Chemical nature and physicochemical properties of the most important food acids.

37. Fermentation: biochemical meaning, use in food production, influence on nutritional value. Microorganisms with technological beneficial use.

38. pH: physical meaning, methods of calculation. Importance of pH measurement in food production.

39. Metabolism. Key stages of food metabolism: proteins, fats, carbohydrates.

40. Food intolerances: possible causes and their nature. Examples of pathologies, their therapy and prevention.

41. Nutritional calculations: from a set of ingredients to a finished product.