

Department	: Chemistry
Level	: 3
Name of the Examination	: Final Examination
Course Title and Code	: Quality Assurance in Food Industry (CYD3215)
Academic Year	: 2022-2023
Date	: 07 th January 2024
Time	: 9.30 a.m. – 11.30 a.m.
Duration	: 2 hr

General Instructions

1. Read all instructions carefully before answering the questions.
2. This question paper consists of 50 multiple-choice questions (MCQs) in (7) pages.
3. Use a pen not a pencil.
4. Use blue or black ink to answer the questions.
5. Clearly state your **index number in your MCQ answer sheet.**
6. **You have to handover the question paper with your MCQ answer sheet itself.**
7. Involvement in any activity that is considered as an exam offense will lead to punishment.

01. Which is **not** considered as a function of food additives in Sri Lanka?

- (i) Modify the sensory properties of food.
- (ii) Extend the shelf life of food.
- (iii) Help in food processing.
- (iv) Increase the nutrient value of food.

02. Select the **wrong** statement.

- (i) Food additives can be natural or synthetic.
- (ii) Food additives are added to food during processing only.
- (iii) Flavour enhancers are food additives.
- (iv) Food additives should not exceed permitted levels.

03. International numbering systems (INS) is a numbering system for

- (i) food additives.
- (ii) food preservatives.
- (iii) food colourings.
- (iv) food emulsifiers.

04. Two common preservatives used by our ancestors in preserving food are,
- (i) Salt and vinegar
 - (ii) Bee honey and salt
 - (iii) Palm oil and salt
 - (iv) Sugar and vinegar
05. Consider the following statements regarding E numbers?
- a. It is the numbering system used in the European Union.
 - b. INS number is replaced by the letter E.
 - c. Both the INS number and the E number are used to identification and regulation of food additives.
- True statements/s is/are,
- (i) a and b only
 - (ii) b and c only
 - (iii) a and c only
 - (iv) all a, b, and c
06. Select the **wrong** statement regarding Lecithin.
- (i) It is found in egg yolks.
 - (ii) It has a polar hydrophilic end.
 - (iii) It has a non-polar hydrophobic end.
 - (iv) It acts as a flavouring agent.
07. Select the two preservatives which are commonly used in processed fruit-based food.
- (i) INS200 and INS300
 - (ii) INS211 and INS220
 - (iii) INS250 and INS260
 - (iv) INS203 and INS205
08. The food additives which are used to keep the food in moist conditions and reduce the viscosity are called,
- (i) stabilizers
 - (ii) Humectants
 - (iii) Antioxidants
 - (iv) Acidulants
09. Select the **correct** statement.
- (i) Bicarbonate added to flour helps the dough rising due to SO_2 formed.
 - (ii) Sodium dihydrogen phosphate gives a smooth texture to food and a bitter taste.
 - (iii) Acid regulators control acidity and alkalinity of food by neutralizing the changes in pH
 - (iv) Citric acid act as a buffering agent by increasing the pH.
10. ADI (Acceptable Daily Intake) is a measure of,
- (i) The minimum amount of a substance that can be ingested daily without a health risk.
 - (ii) The maximum amount of a substance that can be ingested daily without a health risk.
 - (iii) The minimum number of substances that can be ingested daily without a health risk.
 - (iv) The maximum number of substances that can be ingested daily without a health risk.
11. Which category of additives includes stabilizers and emulsifiers?
- (i) diluents
 - (ii) antioxidants
 - (iii) food conditioners
 - (iv) leavening agents
12. The thickening agent which is **not** a natural substance is,
- (i) Agar
 - (ii) gelatine
 - (iii) carageen
 - (iv) alginic acid

13. Consider the following natural pigments and the sources.
- β -carotene from carrots
 - curcumin from turmeric
 - cochineal from ants
- The **correct** combination/s of pigment and source is/are,
- (i) a and b only (ii) b and c only (iii) a and c only (iv) all a, b and c
14. Which is **not** a function of an antioxidant?
- Prevents browning of cut fruits and vegetables.
 - Retards fats and oils becoming rancid.
 - Prevents microbial attacks.
 - Prevents deterioration of colour in meat products.
15. Which is **not** a function of acids/acidulants?
- Regulation of viscosity.
 - Imparting a sour taste in food.
 - Coagulation of milk.
 - Inhibition of microbial growth.
16. What is the purpose of adding sodium hydroxide to olives in food processing?
- To give a black colour and reduces the bitterness of olives.
 - To enhance the flavour of olives.
 - To act as a preservative.
 - To inhibit microbial growth.
17. The class of food additives which is **not** controlled by regulations is,
- (i) colorants (ii) firming and crisping agents (iii) sweeteners (iv) preservatives
18. In preparation of jams and jellies, pectin act as a,
- (i) acidulent (ii) anti caking agent (iii) firming agent (iv) Humectant
19. The synthetic antioxidant out of the following is,
- (i) Tocopherol (ii) butylhydroxyanisol (BHA) (iii) ascorbic acid (iv) citric acid
20. Adverse effects associated with Butylated hydroxyanisole (BHA) are,
- Gastric irritation and increased lipid levels in blood
 - Skin irritation and blurred vision
 - Asthma sensitivity and high blood pressure
 - Inducing vitamin D formation and digestive issues
21. Why do humectants give sweet taste to food?
- Humectants are added with sucrose sugar.
 - Humectants contain natural sugars.
 - Humectants are alcohols of simple sugars.
 - Humectants are mixed with artificial sweeteners.

22. What will happen if an anticaking agent is **not** added to icing sugar?
- Icing sugar will become more powdery.
 - Icing sugar will form lumps.
 - Icing sugar will lose its sweetness.
 - Icing sugar will be less soluble.
23. Select the **best match** for the anticaking agent for the food item.
- Icing sugar – potato starch; Table salt – magnesium carbonate
 - Icing sugar – sodium nitrate; Table salt – sodium nitrate
 - Icing sugar – sodium nitrate; Table salt – magnesium carbonate
 - Icing sugar – potato starch; Table salt – potato starch
24. Which statement is **wrong** regarding food colouring.
- There are only eight food colourings permitted in Sri Lanka.
 - Food colouring has no nutritional value.
 - Tartrazine is a yellow food colouring.
 - Food colouring is not associated with any health effects.
25. Why is sodium sulphite used as a preservative in fruit juices instead of SO_2 ?
- Sodium sulphite forms sulphurous acid due to the low pH.
 - SO_2 is a gas and it forms sulphuric acid.
 - SO_2 causes irritation of alimentary canal.
- The **correct** statements are,
- a and b only
 - a and c only
 - b and c only
 - all a, b and c
26. Benzoic acid and sodium benzoate are the mostly used as preservatives in,
- soft drinks
 - sausages
 - cakes
 - cheese
27. The flavour enhancer which is commonly known as Ajinomoto is
- Inosine-5'-disodiumphosphate (INS 631)
 - Guanosine-5'-disodiumphosphate (INS 627)
 - Monosodium glutamate (MSG) (INS 621)
 - Sodium stearoyl lactylate (INS 481)
28. The sweeteners which are **not** permitted in food prepared for infants and young children are.
- Sorbitol and mannitol
 - Saccharin and xylitol
 - Aspartame and sucralose
 - All of the above
29. Consider the following statements.
- Animal excreta found in food can be classified as a physical contaminant.
 - The only biological contaminants are viruses and bacteria.
 - Contaminants in food can be divided into three main categories.
- True** statements are,
- a and b only
 - a and c only
 - b and c only
 - all a, b and c

30. Which of the following is a major source of toxic compounds in food?
- (i) Natural minerals and vitamins.
 - (ii) Microbial fermentation.
 - (iii) Activities of humans on the environment.
 - (iv) Packaging materials made of glass or metal.
31. Which one out of the following is a phytotoxin?
- (i) Histamine
 - (ii) thiaminase
 - (iii) cyanogenic glycosides
 - (iv) arginase
32. Goitrogens are phytotoxins. They are mainly found in,
- (i) yam tubers
 - (ii) seeds of legumes
 - (iii) cruciferous plants
 - (iv) fleshy fruits
33. Which statement is **wrong** regarding the protease inhibitors found in legumes?
- (i) They are mostly present in seed coat of seed germ.
 - (ii) They can be destroyed by fermentation.
 - (iii) They inhibit protein digestion.
 - (iv) They can be denatured by soaking.
34. Avidin is an animal toxin found in,
- (i) Fish
 - (ii) bird eggs
 - (iii) shellfish
 - (iv) milk
35. Mycotoxins are,
- (i) found in fungi and molds.
 - (ii) useful in processing dairy products.
 - (iii) not harmful to human.
 - (iv) destroyed by heating.
36. Bioaccumulation of chemical contaminants in the body does **not** take place through,
- (i) Food chains
 - (ii) Drinking water
 - (iii) Synthesis inside the cells
 - (iv) Bad manufacturing processes
37. One of the main sources of arsenic entering into the environment is,
- (i) Pesticides
 - (ii) burning of wood
 - (iii) leather tannery
 - (iv) ceramic industry
38. What action is **not** recommended to avoid veterinary drug residues entering into human bodies?
- (i) Milking the cows after a safety period.
 - (ii) Slaughtering the animals after a safety period.
 - (iii) Chemical treatment of food to destroy the drug residues.
 - (iv) Safety checks on animal products for the drug residues.
39. Which chemical contaminants are commonly found in food packaging materials?
- (i) Lead and mercury
 - (ii) Phthalates and bisphenol A
 - (iii) Arsenic and cadmium
 - (iv) Chromium and selenium

40. How do polycyclic aromatic hydrocarbons (PAHs) commonly enter food?
- Through direct addition during food processing
 - Via contamination from improper packaging
 - During incomplete burning of organic substances
 - As a result of microbial fermentation
41. Which of the following are considered as the main objectives of the current Food Act No. 26 of 1980?
- To regulate manufacture, storage, import, distribution and sale of any food in Sri Lanka.
 - To establish the Codex Alimentarius Commission.
 - Repeal the Food and Drug Act of 1929.

The **correct** statement/s is/are,

- (i) a and b only (ii) a and c only (iii) b and c only (iv) All a, b and c
42. The authority which is responsible for the preparation of new regulations and revisions of current regulations in Sri Lanka is,
- Colombo Municipal Council
 - Sri Lanka Standards Institution (SLSI)
 - Medical Officer of Health (MOH)
 - Food Advisory Committee

43. What is the primary purpose of SLS System Certification?

- To enhance product shelf life
- To evaluate product aesthetics
- To assess company management systems
- To ensure compliance

44. Which of the following is **not** required to be included in a HACCP plan?

- List of HACCP team members
- Documentation of methods and procedures
- Records of employee training programmes
- Food regulations

45. Select the **wrong** statement with respect to Food Act No.26 of 1980.

- Part III deals with how to take legal action against violators of regulation.
- Part IV deals with the food regulations framed under the Food Act.
- Part II deals with the food regulations framed under the Food Act.
- Part II deals with the administration of Food Act and regulations in Sri Lanka.

46. Suppose a sealed can of fish is spoilt. What is the primary benefit of having labelling regulations?

- It guarantees a refund from the manufacturer.
- It enables the buyer to complain to authorities.
- It mandates a replacement by the retailer.
- It ensures a discount on future purchases.

47. What is being sterilized in aseptic packaging?

- a. The packing b. The food c. The food worker's hands d. Food preparation environment

The **correct** answers are,

- (i) a and b only (ii) a and d only (iii) b and c only (iv) b and d only

48. Why is it important to label food?
- Only to make the consumer aware of the contents.
 - To decide which product to consume.
 - Before purchasing to compare the different brands of the same food.

The **correct** statements are,

- (i) a and b only (ii) a and c only (iii) b and c only (iv) All a, b and c
49. The feature that should **not** be on a 'Nutritional Fact Label' is,
- (i) SLS certification (ii) Total calorie value (iii) Serving size (iv) Ingredient list
50. What should the font size of the brand/trade name be in comparison to the common name on a label?
- Half the size
 - Same as the common name
 - Three times the size
 - One and a half times the size

Introduction

The purpose of this study is to investigate the effects of various factors on the performance of the system. The study is divided into several sections, each focusing on a different aspect of the system's performance.

The first section discusses the theoretical background of the system, including the underlying principles and the expected outcomes. This section provides a comprehensive overview of the system's architecture and the various components that contribute to its overall performance.

The second section describes the experimental setup, including the hardware and software configurations used for the study. This section details the methodology used to collect and analyze the data, ensuring the reliability and validity of the results.

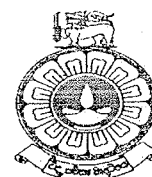
The third section presents the results of the study, showing the performance metrics and the impact of the various factors. This section includes detailed data analysis and statistical tests to support the findings, highlighting the significant differences between the different configurations.

The fourth section discusses the implications of the study, including the practical applications and the potential for further research. This section provides a critical analysis of the results, discussing the strengths and limitations of the study and suggesting directions for future work.

The fifth section concludes the study, summarizing the key findings and the overall contribution of the research. This section provides a final overview of the study, emphasizing the importance of the results and the need for continued research in this area.

The study is supported by the following references, which provide a foundation for the research and offer additional insights into the field. These references include both theoretical works and empirical studies that have contributed to the current understanding of the system's performance.

THE OPEN UNIVERSITY OF SRI LANKA
 Diploma in Food Science
 Final Examination – 2022/2023
 CYD3215 - Quality Assurance in Food Industry



MCQ ANSWER SHEET: Mark a cross (x) over the most suitable answer.

Index No.

Marks

Unanswered	
Correct Answers	
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