

FOOD QUALITY AND FOOD SAFETY

STUDY NOTES

- **Food hygiene** means to keep the food protected and safe during production storage transportation and handling so that it may not be contaminated and is safe for consumption.
- Purchase food items only from reliable sources and food items having standardised mark like agmark, ISI mark and FPO.
- **Refrigerator** should be set at right temperature 1°C to 4°C.
- Meat and perishable food should be used within 2 hours of purchasing.
- **Food safety** means that food will not cause any harm to the consumer.
- **Toxicity** is capacity to produce harm or injury under any condition to the consumer.
- **Hazard** is the harm or injury result due to addition of substance not used in prescribed manner and quantity. It can be physical hazard, chemical, biological.
- **Physical hazard** in food can be stone, hair, button, nuts, nails, fragments, feathers, stem, seed, etc.
- **Chemical hazards** can be pesticide, chemical residue, toxic metals, preservative, food colours.
- **Biological hazard** can be visible and invisible hazards in food. It consists of worms, fly, protozoa, mould, virus.
- If sour food is kept in copper or brass vessel then copper sulphate is formed which may cause food poisoning.
- Nickel present in stainless steel enters in excessive amount in food while cooking.
- Common causes of **food contamination** are infected food handler, improper storage, cross contamination, long holding period, undercooking and favourable temperature.
- Consequences of unhealthy practices mainly leads to various disease such as diarrhoea, typhoid fever, food infection, etc.
- Any intentional or unintentional addition substitution or extraction of substances which adversely affect the nature purity and quality of food substance is known as **Food Adulteration**.
- The Government of India has enacted the prevention of Food Adulteration Act in 1954.
- An **adulterant** is defined as any item which has a close resemblance with the original item in term of shapes size colour composition so that it cannot be distinguish with the original product.
- Insects infected serials and pulses low quality grains are mixed with high quality cereal.
- In Bajra argot seeds are added Kesari dal is added in chana and arhar dal.
- Milk is adulterated with the use of water. Sometime, starch rich substance like chestnuts bloating paper are added to thicken the milk.
- Sugar is adulterated with chalk powder and find chips where is jaggery is adulterated with grit and mud.
- Honey is adulterated by adding sugar syrup to it.
- The government has created many institutions in order to secure consumer interest and provided quality foods. Marks are a guarantee of quality of products.
- **Standardize marks** like ISI mark for all industrial products, AgMark for agriculture products, FPO food products and FSSAI.

- **FSSAI** refers to Food Safety and Standard Authority of India which consolidate various acts and order that have handled food related issues in various ministries and departments.
- **Codex Alimentarius Commission** is the international body with the objective to protect the health of consumer and facilitate food and agriculture trade. It published document which means food code and collection of international adopted food standards.
- **Codex India** is national coded contact point for India and located at directorate general of health services, ministry of Health and Family Welfare Government of India.
- **ISO** is a worldwide non-governmental federation to promote the development of standardisation and related activities in the world for exchange of goods and services with intellectual, scientific, technological and economic activity.
- **WTO** is World Trade Organisation with the objective to help trade flow smoothly, fairly, freely by trade agreements and settling trade dispute and assisting countries in trade policy issues.
- **Food safety and quality** ensured through good manufacturing practices, good handling practices and hazard analysis critical control point.
- Good manufacturing practices ensure that manufacturer take all proactive steps so that they produce safe products for the consumer. It minimize the false labelling and removal of contamination.
- Good handling practices ensure that product is safe from farm to the store.
- HACCP is approach to food manufacturing and storage in which all process evaluated on the basis of hazard. Each identify hazard at every stage of food chain.
- FSSA 2006 give primary responsibility for food safety through HACCP, GMP and GHP.
- Food industry provides job opportunities as a analyst in quality control lab, quality control manager, food auditor, research and development department, trainer, food safety manager and other post at different food industries.

QUESTION BANK

MULTIPLE CHOICE QUESTIONS

- To keep the food safe during production, storing, transportation and handling is known as
 (a) Food safety (b) Food quality (c) Food hygiene (d) Food adulteration
- Staphylococcus* microorganisms present in
 (a) Liver (b) Stomach (c) Wound (d) Hair
- Under favourable conditions one bacterium would multiple into _____ lakh bacteria.
 (a) 20 (b) 10 (c) 30 (d) 40
- Which of the following options would help you to reduce the risk of contamination?
 (a) Not coughing or sneezing over food (b) Not touching your hair while preparing food
 (c) Removing loose jewelry before preparing food (d) Wearing the correct protective clothing
- The person who is cooking the food and serving the food should keep his hand washed and nails cut comes under
 (a) Environmental hygiene (b) Personal hygiene
 (c) Kitchen hygiene (d) Serving hygiene
- Which statement is incorrect about hygiene while storing?
 (a) Perishable food should be stored in refrigerator.
 (b) If this infect tablets are used for storing serial then it must be cleaned before using the food item.
 (c) All food should be covered with tightly fitting leads to prevent cross contamination.
 (d) Once a food is open its content should not be transferred to glass jar to prevent any reaction with the food.

7. *Salmonella* is spread through _____
 (a) Water (b) Cross contamination (c) Throat (d) Air
8. Hygiene while cooking is not maintained by:
 (a) Food needs to be placed at a cool and dry place if cooked food is not served immediately the moisture present in food can cause growth of bacteria.
 (b) Metal of the vessels and containers may cause food poisoning.
 (c) Keep left over food with fresh food.
 (d) Clean all the appliances and utensils before and after the use.
9. Excessive use of utensils made of coated zinc result in increase of _____ in body which is poisonous for health.
 (a) Copper (b) Zinc (c) Iron (d) Potassium
10. All are good hygiene practices while serving food except
 (a) Finger or thumb should not touch the food.
 (b) Wash the hands and cut the nails before serving the food.
 (c) Food should be served in decorative plate.
 (d) Food should be served in clean place and in clean utensil.
11. Bacteria grow between
 (a) 2 – 4°C (b) 5 – 57°C (c) 10 – 20°C (d) 40 – 50°C
12. Consequences food infected by insects are:
 (a) Cholera (b) Typhoid (c) Diarrhoea (d) All of the above
13. According to which statement, food is not considered adulterated by PFA:
 (a) If any constituent has been removed from food partially or fully.
 (b) If food is infested by insect worms and weevils.
 (c) If food is prepared, pack and stored under unhygienic condition.
 (d) If food not contain or processing has produced in it injurious ingredient.
14. What is full form of PFA?
 (a) Prevention of Food Act (b) Protection of Food Act
 (c) Prevention of Food Adulteration Act (d) None of these
15. Government of India has enacted the Prevention of Food Adulteration Act in _____.
 (a) 1950 (b) 1954 (c) 1855 (d) 1953
16. A substance intentionally added that affects the nature and quality of food is called _____.
 (a) Food poison (b) Food adulterant (c) Food contaminant (d) Food material
17. Which stage does adulteration take place in?
 (a) Producer (b) Distributor (c) Retailer (d) All of these
18. Why are adulterants added?
 (a) To increase shelf-life of products (b) To improve flavour color and appearance
 (c) To sell lesser quantity at the same price (d) None of these
19. Methods for detection of common adulterants are _____.
 (a) Visual tests (b) Chemical tests (c) Physical tests (d) All of these
20. What is adulterated in black pepper?
 (a) Papaya seed (b) Sand (c) Stone (d) Stem
21. Cereal is adulterated by
 (a) Stone (b) Low quality cereal (c) Dry twigs (d) Mud balls

22. What are added to thicken the milk?
 (a) Flour of chestnut (b) Powder (c) Blotting paper (d) All of these
23. What is used to enhance the yellow colour of turmeric powder?
 (a) Methanol yellow (b) Lead chromate (c) All of the above (d) None of these
24. Ground chicory seeds is adulterated in
 (a) Tea (b) Coffee (c) Milk (d) Turmeric
25. If 40% of individual intake of _____, the person may become paralytic due to lathyrism.
 (a) Kesari dal (b) Mentail (c) Argemone Seeds (d) Milk
26. Lathyrism mostly found in _____.
 (a) Boys (b) Girls (c) Old age (d) Infant
27. Initial symptoms of lathyrism are
 (a) Night blindness (b) Stiffening and pain in knee
 (c) Vomiting (d) All of these
28. Which colour is widely used in amongst all prohibited colour?
 (a) Red (b) Orange (c) Metanil yellow (d) Pink
29. Expensive _____ seeds are mixed with cheap argemone seeds.
 (a) Mustard seed (b) Black pepper (c) Stone (d) Stem
30. Consumer can avoid adulteration by
 (a) Not influenced by advertisement (b) Buy food products from reliable shop
 (c) Purchase labelled product (d) All of these
31. ISI refers to
 (a) Indian Standing Institute (b) Indian Standard Insurance
 (c) Indian Standard Institute (d) India Standard Institute
32. BIS developed the mark of
 (a) Agmark (b) ISI (c) Hallmark (d) FPO
33. Which of the following is Certification Mark for all industrial products manufactured in India?
 (a) Agmark (b) ISI (c) Hallmark (d) FPO
34. After how many years _____ marks are reviewed?
 (a) 1 (b) 2 (c) 4 (d) 5
35. Which statement is correct about ISI?
 (a) It ensure strict quality control right from procurement of raw material.
 (b) It develops awareness among consumers to safeguard their interest.
 (c) It gives manufacturers license.
 (d) All of these
36. On which item, ISI is not present
 (a) Fan (b) Milk powder (c) Pressure cooker (d) Door
37. Real ISI carry mandatory _____ digit license number.
 (a) 5 (b) 4 (c) 7 (d) 6
38. Which mark is Certification Mark on all processed fruit products?
 (a) FPO (b) FSSAI (c) ISI (d) AGMARK
39. FPO mark guarantee that the product has been manufactured in _____ environment.
 (a) Food safe (b) Clean (c) Large (d) Industrial
40. AGMARK is given to
 (a) Mustard oil (b) Gram flour (c) Soyabean seed (d) All of these

41. Which of the following is incorrect role of AGMARK?
 (a) It establishes norms for agriculture and livestock at natural stages.
 (b) It doesn't guarantee to quality certification.
 (c) It give license to company.
 (d) It frame quality standards for agriculture commodity.
42. Full form of FSSAI is
 (a) Food Safety and Standard Authority of India (b) Food Safely and Standard Authority of India
 (c) Food Safety and Standardized Authority of India (d) Food Safety and Standard Authority of Inspection
43. Which act is not repealed after commencement of FSS Act 2006?
 (a) PFA 1954 (b) FPO 1955
 (c) Vegetable Oil Products Order 1947 (d) Food Making Act
44. If misleading advertisement is published then FSSAI make penalty of
 (a) 10 lakh (b) 2 lakh (c) 4 lakh (d) 6 lakh
45. Which of the following is not an international organisation to protect health of consumer and prevent dishonest practice for selling of the food?
 (a) CAC (b) ISO (c) WHO (d) UNICEF
46. What is the full form of CAC?
 (a) Codex Alimentarius Commission (b) Codex Alimentarius Commission
 (c) Code Alimentary Commission (d) Codex Alignment Commission
47. The document published by CAC includes _____
 (a) Food standards (b) Codes of practice
 (c) Guidelines and recommendation (d) All of the above
48. Which of the following is the National Codex Contact Point for India?
 (a) Codex India (b) Codex Europe
 (c) Codex America (d) Ministry of health and family welfare
49. Which of the following international organisation is made for development of standardisation and activities to facilitate the international exchange of goods and services?
 (a) Codex (b) ISO (c) WTO (d) UNICEF
50. In which year, the WTO was established?
 (a) 1994 (b) 1995 (c) 1996 (d) 1997
51. Which of the following organisation helps trade flow smoothly and settling trade dispute?
 (a) Codex (b) ISO (c) WTO (d) UNICEF
52. Full form of GMP is
 (a) Good Manufacturing Practices (b) Good Made Practices
 (c) Good Manufacturing Protocols (d) Good Made Protocols
53. What is full form of HACCP?
 (a) Health Analysis Critical Control Point (b) Hazard Analysis Critical Control Point
 (c) Health Analysis Control Critical Point (d) Hazard Analysis Control Critical Point
54. Which of the following provides assurance about safety of food an assessment of hazard during the food chain raw material, procurement manufacturing, distribution and usage of product?
 (a) HACCP (b) WHO (c) ISI (d) WTO
55. Which of the following is not feature of GMP?
 (a) Mislead consumer (b) Remove contamination
 (c) To protect consumer (d) Minimize false labelling

56. Biological catalyst increase chemical reaction in food by _____
 (a) Pesticide (b) Moisture (c) Enzyme (d) Exposure to light
57. _____ takes place when organism produce toxin and these toxins in the food cannot be deducted by smell appearance or taste.
 (a) Food infection (b) Food poisoning
 (c) Food intoxication (d) Stomach infection
58. _____ hazards are living organism and microbiological organism associated with food and cause diseases called food borne pathogens.
 (a) Chemical (b) Biological (c) Physical (d) All of the above
59. Salmonella exist in _____
 (a) Intestinal tract of animal (b) Raw milk
 (c) Egg (d) All of the above
60. Sneha ate food from market which was good in appearance and smelled pleasant. After few hours she complaint of stomach a and vomiting. This could happen due to
 (a) Food infection (b) Food contamination (c) Food intoxication (d) Food adulteration

Input Text Based MCQs

Read the passage and answer the questions that follow (61 to 65).

Food safety management system refers to management of food with the implementation of safety practices. Food safety and quality cannot be avoid as food borne pathogens, chemical toxicant and other hazardous elements diversity affected the health of consumer. A food hazard can enter into food at any stage of food chain. Food safety and quality is checked by three ways that is good manufacturing practices good hanging practices and hazard analysis critical control point.

61. _____ is business tool to refine compliance and performance by producer.
 (a) GMP (b) GHP (c) HACCP (d) All of the above
62. Identification of hazard and assessment of hazard occurrence is done by
 (a) GMP (b) HACCP (c) GHP (d) GHP AND GMP
63. _____ hazards are living organism and microbiological organism associated with food and cause diseases called food born pathogens.
 (a) Chemical (b) Biological (c) Physical (d) All of the above
64. HACCP must not implement for
 (a) Preventive approach to ensure food quality (b) End product inspection
 (c) More production of food item (d) All stakeholders utilise resources efficiently
65. Who is the fundamental asset of food production company?
 (a) Employee (b) Consumer (c) Retailer (d) Manager

ANSWERS

Multiple Choice Questions

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|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 1. (c) | 2. (c) | 3. (a) | 4. (a) | 5. (b) | 6. (d) | 7. (b) | 8. (c) | 9. (b) | 10. (c) |
| 11. (b) | 12. (d) | 13. (d) | 14. (c) | 15. (b) | 16. (b) | 17. (d) | 18. (c) | 19. (d) | 20. (a) |
| 21. (b) | 22. (d) | 23. (c) | 24. (b) | 25. (a) | 26. (a) | 27. (?) | 28. (c) | 29. (a) | 30. (d) |
| 31. (c) | 32. (b) | 33. (b) | 34. (d) | 35. (d) | 36. (d) | 37. (c) | 38. (a) | 39. (a) | 40. (d) |
| 41. (b) | 42. (a) | 43. (d) | 44. (a) | 45. (d) | 46. (b) | 47. (d) | 48. (a) | 49. (b) | 50. (b) |
| 51. (c) | 52. (a) | 53. (b) | 54. (a) | 55. (a) | 56. (c) | 57. (c) | 58. (d) | 59. (d) | 60. (c) |

Input Text Based MCQs

61. (a) 62. (b) 63. (d) 64. (c) 65. (b)

