

## Food Quality Control & Analysis

Full Marks: 100

1. Introduction to the concept of food quality control 2
2. Quality and its function, quality assurance in food industries & functions of quality attributes of food 4
3. Quality attributes of foods 6  
( a) size and shape b) Colour and gloss c) Texture visual & objectives attributes d) Aroma of foods, introductory ideas.
4. Anthropology of food psychology 2
5. Introduction, sensory, evaluation of foods and beverages 3
6. Toxicological and legislative aspect of foods additives 3
7. Water contamination in the food industries, water supplies, water purification, types of impurities, water analysis, method of removal of their waste disposals 3
8. Extraneous matters in foods and their methods of detection and removal 3
9. Good Laboratory practice 2
10. Laboratory layout and design, operation and maintenance of different types of laboratory 3
11. Role of QC, chemist in food establishments 3
12. Hazard analysis and critical control points 3
13. Food contamination and adulteration, quality control under different stages of food processing. Quality assurance and sampling technique 5
14. Food standards - formulation 2
15. Food control system in Nepal 3
16. Introduction to agricultural practices in Nepal in Food control system 2
17. Food laws development and enforcement, inspections grading and certification of food 3
18. A study of international food regulations, Functions of Codex Alimentations Commission 3
19. Terminologies and concept of Good Manufacturing Practice (GMP) and generally recognized as safe. (GRAS) 3
20. Import and export quality control rules and regulation. Inspection and sampling at sea port and dry port 2
21. ISO 9000 series 2
22. Introduction to TQM 2
23. Statistical quality control quality control chart, exercise applying inference tests. 5
24. Strengthening of QC network in context of WTO 2
25. Feed acts and regulations 2
26. Statistical quality control, modern trends in food science 5
27. Errors & accuracy in analysis of food materials, sampling & preparation of sample for analysis 2

- |     |   |   |
|-----|---|---|
| 28. | Proximate analysis of food products i.e. estimation of moisture, ash, carbohydrate, crude fiber, crude protein, crude fat   | 4 |
| 29. | Occurrence, toxic effects and test of hazardous, contaminants, heavy metals, pesticide and drug residence, microbial toxins and adulterations such as argimona maxicana | 4 |
| 30  | Study of the methods of determination of additive like sulphus dioxide, benzoic acid, formaldehyl, boric acid lactic acid an saccharin, cyclamate, dulcin etc.          | 4 |
| 31. | Study of the methods of determination of trace metals like tin, lead, arsenic   | 3 |
| 32. | Test of radioactivity on foods  | 2 |
| 33. | Analytical methods applied in dairy products like milk, milk powder, ice cream, butter, cheese, milk cream, chocolates etc.   |   |
| 34. | Analysis of food stuffs with references to the standards of quality fixed for jam, jelly , canned fruits, & vegetables, pickles , squash, vinegar, rice, wheat          | 5 |

#### PRACTICALS:

1. Proximate analysis of wheat flour, bran, biscuit, milk
2. Extraction, separation & identification of water & oil soluble food colours.
3. Detection or estimation of trace metals, Iron tin, copper, lead, arsenic (depending on the facilities available)
4. Estimation of food additives like SO<sub>2</sub>, benzoic acid, formaldehyde, boric acid, saccharin, dulcion, cyclamate, lactic acid
5. Analysis of food stuffs with references to the standards of quality fixed for jam, jelly , canned fruits and vegetables, milk, ice-cream, biscuits, flour, pickles, cheese, dahi, meat products.
6. Checking of water contamination & extraneous matters in food
7. Sensory evaluation of foods
8. Test of adulteration: Baudouin test, Halphen test, Holde test, Hexabromide test, Metaril yellow, Stacrh in milk, Agremone oil test
9. Mini column chromatography ( e.g. for argemone oil test)
10. Chromatographic separation of free amino acids by TLC
11. Two-dimensional paper chromatography
12. Complete analysis of table salt
13. Determination of glucose by enzymatic method

14. Determination of Cholesterol
15. Determination of Vit C
16. Statistical analysis using different software, e.g. office add-ins, GENSTAT, etc
17. Paper chromatography, ascending, and one by two dimensional
18. Water analysis: Physiochemical and bacteriological
19. Stability of fats and fatty foods by AOM
20. Determination of glucose by glucose oxidase method

#### TEXTBOOKS:

1. Ranganna , S. Hand Book of analysis of and quality control of fruit and vegetables products, 2<sup>nd</sup> Edn. Tata MC GRAW HILL pub, New Delhi 1996
2. Sadasivam, S and A. Manikan, Biochemical methods in Agricultural Sciences, India 1992
3. Plummer, D.T. An introduction to practical biochemistry 3<sup>rd</sup> Edition .Tata Mc Graw Hill Pub. India , 1987
4. AOAC , Official Methods of analysis of the association of official analytical chemist 13<sup>th</sup> edn ,Washington D.C 1980
5. Egan, H, R.S Kirk and R. Sawyer .Pearson's chemical analysis of foods 8<sup>th</sup> Edn Churchill living stones , New York ,1981
6. S.M Herschdoerfer . Quality control in the food Industry vol, 1,2,3
7. Jerry Banks, Principle of quality control, Wiley Johan Weley and Son, New York