TECHNOLOGY OF FOOD PRODUCTS - III
(Meat, Poultry and Fish)

Full Marks: 100

1. Development of livestock and poultry in Nepal. Livestock production, meat production and supply.
   3
2. Development of livestock based industry in Nepal, Act and regulations.
   2
3. Slaughtering of animals and poultry birds, Preslaughter handling, antimortem inspection, stunning, dressing of cattle, sheep and goat, scalding and dehairing of pig. Scalding and defeathering of poultry, evisceration, splitting of carcass, postmortem inspection.
   12
4. Muscle structure.
   2
5. Chemical composition of meat, Moisture, protein and non-protein nitrogenous compounds, fat , carbohydrate, vitamins and minerals.
   2
6. The nutritive value of meat and meat products,
   4
7. Meat grading, Beef grading, criteria and methods of grading beef in USA and Europe, beef grades, Pork grading, pork grades, grading criteria, instrumental grading. 6
8. Postmortem changes in meat (muscle) , Normal and ab normal (PSE, DFD cold shortening thaw rigor) postmortem changes in meat.
   3
9. Quality of meat and factors affecting quality of meat, Colour, odour and taste tenderness, juiciness quality of meat; intrinsic and extrinsic processing factors affecting quality attributes.
   6
10. Methods of meat preservation.
    Preservation of meat by low temperature (Chilling and freezing) , Principles of preservation freezing methods storage temperature and shelf life. Preservation of meat by salting and curing: Preservatives effect of salt and

nitrite, methods of curing, kinetics of curing, chemistry of cured colour development. Development of cured aroma, toxicity of nitrite.

Preservation of meat by smoking: Production of smoke from wood, methods of smoke generation, effect of smoking on meat (preservation, colour development, aroma development, texture firming and softening) health aspect of smoked meat.

Preservation of meat by thermal processing, drying and dehydration and irradiation: Principle of preservation.

20

11 Manufacturing technology of meat products.

11.1 Sausage products: types , technology of emulsion type cooked sausage (theory) of emulsion development, selection of raw materials and ingredients such as meat, fatty materials, functional ingredients, manufacturing process of sausage) ,dry sausage (types, selection of raw materials and ingredients, process of manufacture)

11.2 Cured meats: raw material, manufacturing process
11.3 Canned meat products: manufacturing technology of canned meat products.
11.4 Dry meat: manufacturing process of different dried meats.

16

12. Packaging, transport and distribution of meat and meat products. 4
13. Analysis of meat and meat products (proximate composition, aw, pH, colour, water holding capacity, tenderness, salt phosphate, peroxide value, TBA, nitrite, nitrate etc) 10
14. Meat by-products: production, classification, nutritive value, processing and utilization.

6

15. Egg: Production, structure, chemical composition, nutritive value, spoilage and factors affecting egg quality, grading, methods of preservation, manufacturing technology of egg products such as dried egg and frozen egg.

10

16. Legislative aspects of meat, fish and poultry products.
3

17. Fish: Production, catching, transportation, spoilage, methods of preservation (salting, smoking, drying preservation by chemicals etc) manufacturing technology of fish products.
8

PRACTICALS:

1. Slaughtering of pig and buffalo
2. Meat cutting. Preparation of wholesale & retail cuts
3. Preparation of R-to C chicken and its cut up parts
4. Preparation of sausage, (cooked emulsion type sausage, fresh ground sausage, dry sausage)
5. Preparation of cured meats: ham and bacon
6. Physiochemical analysis meat and poultry products (proximate composition, pH, water holding capacity, salt, nitrite, nitrate, phosphate, peroxide value, TBA No, aW, Eh, starch etc)
7. Grading, handling and preservation of egg.
8. Determination of egg quality.
9. Determination of freshness of fish by subjective method and lab tests.
10. Fish preservation by salting, smoking and drying etc, methods
11. Visit to local poultry, pig and fish farms.
12. Visit to local abattoir.

TEXT BOOKS:

1. Gracey, J.F and Collins, D.S Meat Hugiene, ELBS. 1992
2. Kramlich, W.E, Pearson, A.M and Tauber, F.W , processed meats, AVI ,publishing Company , 1982
3. Lawrie. R.A Meat Science; III ed Pergamon press, 1979
4. Levie, A. Meat Handbook ; IV edn. AVI publishing company 1979
5. Pearson. A.H and Dutson, F.R, Edible Meat- By products: Advances in Meat, 1988
6. Research; vol.5. Elsevier Applied Science
7. Pearson, A.M and Gillet, T.A .Proscessed Meats, IInd Edition CBS, 1997

8. Price, J.F and Schweignert, B.S. The science of meat and meat products. IInd edn. 1971
9. Sharma. B.D. Meat and Meat productsTechnology jaypee Brothers Ltd. 1999
10. Subba, D Testbook of Meat Technology, 2001
11. Subba, D. Practical Book of Meat, Poultry and Fish Technology, RONAST, 2001

REFERENCE BOOKS:

Anonymous Proceedings of FAO seminar on meat development and low cost preservation methods in Asia and Pacific October 24 - 28, 1990, Bangkok, Thailand, 1990

Anonymous Guidelines for slaughtering , meat cutting and further processing FAO Animal production and Health paper 91 FAO Rome 1991

Anonymous Meat and Meat products in human nutrition in developing countries FAO Food and Nutrition in developing countries FAO Food and Nutrition paper 53, FAO , Rome 1992

Anonymous Statistical Information in Nepalese Agriculture 1998/99. His majesty's government , Ministry of Agriculture , Agricultural Statistics Divisions Singha Durbar, Kathmandu ,Nepal 1998/99.

Anonymous Marketing of meat and meat products .Third Livestock Development Project . Department of livestock Services , Ministry of Agriculture , HMG, Nepal 1999