

**MULTIDISCIPLINARY COURSE IN CHEMISTRY**  
**FOR SEMESTER-I/II/III**

**Subject Code: MDC-CHE**

**Credit: Theory-03, Full Marks=75, Pass Marks= 30, Lectures:45**

**Instruction to Question Setter for**

**End Semester Examination (ESE 75 marks):**

There will be two group of questions. Group A is compulsory which will contain three questions. Question No.1 will be very short answer type consisting of five questions of 1 mark each. Question No. 2 & 3 will be short answer type of 5 marks. Group B will contain descriptive type six questions of fifteen marks each, out of which any four are to answer.

**Note: There may be subdivisions in the questions of group B.**

**Unit-I: Food & Nutrition (12 Lectures)**

Basic concept on Food, Nutrition and Nutrients. Classification of Food, Classification of Nutrients. Carbohydrates-Definition, sources, classification, and properties Fatty acids-composition, properties, types. Lipids -Definition, sources, Classification & Properties, daily requirements, function Role & nutritional significances of PUFA, MUFA, SFA, W-3 fatty acid. Proteins- Definition, Sources, classification & properties, daily requirements, functions. Assessment of Protein quality (BV, PER, NPU). Vitamins- Definition, sources, classification, diseases caused by deficiency of Vitamins. Minerals - Definition, sources, classification, diseases caused by deficiency of minerals.

**Unit-II Chemicals in Food (6 Lectures)**

Introductory idea of Food colours, Flavours and sweeteners, Fat emulsifiers and stabilizing agents, Flour improvers - antistaling agents and bleaches, Antioxidants, Nutritional supplements such as minerals, vitamins and amino acids.

**Unit-III Food Preservation (6 Lectures)**

Food preservation: definition, objectives and principles of food preservation. Different methods of food preservation. Preserved Products: Jelly, Marmalade, Sauces, Pickles, Squashes, Syrups- Definitions, types, composition, storage, uses and nutritional aspects, Food Standards: ISI, Agmark, FPO, MPO, PFA, FSSAI.

**Unit-IV Agrochemicals (6 Lectures)**

Herbicides-Definition, Classification, properties, uses and health hazards, Fungicides Definition, Classification, properties, uses and health hazards, Insecticides- Definition, Classification, properties, uses and health hazards, traditional pesticides.

**Unit-V Drugs and Medicines (6 Lectures)**


Drugs- Definition, Classification, Antacids, Antihistamines, Tranquillizers, analgesics, antidepressant drugs, Antimicrobials, Antibiotics, Antiseptics and disinfectants, medicinal uses of common herbs and plants.

**Unit-VI Chemistry of Materials (9 Lectures)**

Soaps and Detergents – Definition, Classification & their action, Biofuels – Definition, Classification ,production of biofuels and its utility as alternative fuel source, Fibers: Definition, Classification and their uses, natural fibers, cotton, wool, silk, rayon, artificial fibers, polyamides, acrylic acid, PVC, PVA; Examples of natural biodegradable polymers synthetic biodegradable polymers. Use of polymeric materials in daily life.

**Reference:**

1. SrilakshmiB( 2017); Nutrition Science,6th Multicolour Ed. New Age International (P) Ltd.
2. RodayS(2012); Food Science and Nutrition, 2nd Ed. Oxford University Press.
3. Subalakshmi, G and Udipl, SA(2006);Food processing and preservation, 1st Ed. New Age International (P)Ltd.
4. Agrochemicals preparation and mode of action, Cremlyn, R.J.W.
5. Insecticide, Action and Metabolism, O'Brien, R.D., Academic Press, New York and London.
6. Chemical Pesticides: Mode of Action and Toxicology, Stenersen, J., CRC, 2004
7. Indian pharmacopoeia

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