**GROUP-5**

**1)** General awareness, Reasoning, Mathematics, Science, History including Haryana related history, current affairs, literature, Geography, Civics, Environment, Culture etc.- (**Weightage 20%)**

**2)** Computer terminology, Fundamentals, word software, excel software, Power point, internet, web browsing, Communication, emails, downloading and uploading data on websites etc**. -**

**(Weightage 10%)**

**3) Subject related syllabus-** **(Weightage 70%)**

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## Nutrition Science

1. Definition of Nutrition, nutrients, undernutrition, malnutrition and terms used in nutrition-recommended dietary allowance, balanced diet, health., reference man & reference womanEnergy: Units of energy, Food sources of energy, RDA of energy for sedentary, moderate &heavy worker (men & women), during pregnancy and lactation, BMR-Definition and factors affecting BMR, Water: Functions and sources of water for human body, effects of excess and low intake of water on human body, Carbohydrates: Classification, functions, sources, digestion& requirement, effects of deficiency and excess (in brief)

2. Protein: Classification, functions, sources, digestion& requirement, effects of deficiency and excess (in brief), Fats/ Lipids: Classification, functions,Sources & requirement, health problems associated with lipids, Dietary Fiber: Types of fiber, functions or role of dietary fiber in the human body, sources of fiber andeffect of deficiency of fiber in human beings.

3. Vitamins: Definition and classification, Fat soluble vitamins: Functions, sources, recommended dietary allowances, effects of excess & deficiency (in brief) ofVitamin A, Vitamin D, Vitamin E and Vitamin K, Water soluble vitamins: Functions, sources, recommended dietary allowances, effects of excess & deficiency (in brief) of Vitamin C,Vitamin B1 (Thiamine), Vitamin B2, (Riboflavin), Vitamin B6 (Pyridoxin), Vitamin B12 (Cyanocobalamin),Niacin andFolic acid.

4. Minerals: Definition and Classification, Macro minerals: Functions, Sources, RDA, Effect of Excess and low intake of Calcium,Phosphorus, Magnesium, Sodium and Potassium, Micro Minerals: Iron, Iodine, Fluorine, Zinc

## Biostatistics & research methodology

Meaning & scope of statistics, Presentation of data – tabulation, graphic & diagrammatic presentation by graphs, bars, chartsetc.Measures of central tendency – mean, mode, median, Measures of dispersion – mean deviation, standard deviation, variance, range, skewness, ketosis, Corelation & regression interpretation, Ideas of probability, Hypothesis – null hypothesis – level of significance, Sampling techniques, Student's t test – its application, significance, confidence interval in normal population, for mean when variance is known & unknown, Design of experiments – Analysis of variance, completely randomized & random blockdesigns, Non parametric inference: Sign, Median, Run test & X test, (as goodness of fit & independence of attributes in 2x2 & r x c contingency tables), Research design – Experimental & Descriptive, definition & identification of Researchproblem, selection of problem, basic assumption & limitation of problem, Data gathering instruments – Questionaries, interviews, measurements & scales, reliability & validity of measuring instruments, Methods of collecting information – Census & sampling, various sampling schemes, Methods of estimating population means, & its standard error in simple random sampling & stratified random sampling, planning, executing & analysis of large-scale surveys with special emphasis on surveys in Nutrition. Presentation & preparation of report for publication

## Applied Nutrition & Food safety

Assessment of nutritional status of different age groups, - Infants, preschoolers, children, adolescents, adults & elderly, - Pregnant & lactating females, Planning diet for different age groups as per their nutrient requirements & factorsaffecting their nutritional needs, - Infants, preschoolers, children, adolescents, adults & elderly, - Pregnant & lactating females, Methods of estimating requirements and

RDA of energy, Protein, minerals and vitamin for different age groups, Major nutrition related community health problems – PEM, anemia, iodine deficiency, vitamin A, deficiency, scurvy, Beri Beri, pellagra, fluorosis etc.Inborn errors of metabolism in brief, Management of diet in different types of institutional settings, 6. Quality Control - National &International food safety regulating agencies& organizations, FSSAI, FPO, ISI, Agmark, Codex and ISO. FSSAI & its rules & regulations to maintain food quality & holistic wellness, - Safe food practices as per FSSAI, nutrition labelling & carbon foot prints of food, Quality evaluation & Techniques, - Sensory evaluation – Color, texture, flavor & taste, different tests & methods ofsensory evaluation of foods, - Bacteriological & nutritional quality evaluation for food products, - Statistical methods used in quality control, - Food adulteration & food toxicities including food borne illness, Food safety & contamination: Naturally occurring toxins & antinutritional factors, (Lathyrism, Epidemic dropsy), contamination of food (Chemical, heavy metal & pesticide residue) fungal aflatoxic hepatitis, entero-ergotism & mycotoxicosis.

## Molecular Nutrition

The molecular nutrition paradigm, Nutritional physiology and biochemistry, Nutriepigenomics & metabolomics, Dietetics & molecular gastronomy, Molecular nutrients targeting with diet, Dietary supplements & nutraceuticals, Foodomies and its advantages, Metabolic syndrome in relation to different diseases, Solutions to implement Molecular Nutrition.

## Therapeutic Nutrition

Importance of diet therapy, Role of Dietician, Factors in patient care, counselling and coordinated nutritional services for the patient, feeding the patient, psychological aspects & assessment of patient's needs – Different nutritional assessment tools for patients (MUST, SGA, MNA etc.), RDAs & Dietary guidelines for Indians, food exchange, therapeutically modified diet in terms of nutrient consistency and composition,Physiological changes & diet for different types of infections (Fevers, TB etc.), Physiological changes & diet for GI disorders, Physiological changes & diet for Cardiac disorders, Physiological changes and dietary management for diabetes, Physiological changes & diet for pulmonary disorders, Physiological changes & diet for kidney disorders, Physiological changes & diet for liver disorders, Physiological changes & diet for neurological disorders, Physiological changes & diet for different types of cancers, burn, Nutritional care in pre & post-surgery patients including bariatrics, Physiological changes & diet for different types of autoimmune disorders, diet for celiac patients, diet for various deficiency disorders, Special feeding methods - Enteral & parental feeding, Drug nutrient interaction, Standard guidelines for clinical nutrition (ASPEN/ ESPEN/ IAP/ KDQOI etc.)

## Advanced Nutrition

Sports nutrition, energy balance, Weight management (Different types of diets in fashion), Nutrition in stress, Nutritional needs in extreme environmental conditions andDisaster (famine, drought, war), Space nutrition, Fermented food products, Antioxidants, Functional foods & Organic foods, Nutrigenomics, Prebiotics, probiotics, phytochemical & symbiotics, FODMAP

**Important Note: The Weightage as mentioned against the syllabus is tentative & may vary.**