ACADEMIC CALENDER

DEPARTMENT – FOOD AND NUTRITION

SUBJECT- FNTA

SESSION – 2016-2017

PART – I

PAPER - I

(UNIT- I & II)

FULL MARKS – 50+50

SESSION	TOPIC	Teacher
Term 1,Half 1, (July-October)	**HUMANNUTRITION** **UNIT-I** 1`.Concept and definition of the terms "Nutrition", "Malnutrition" and "Health" 2. Brief history of nutrition science. Basic concept and definition of terms related to nutrition. 3. Minimum nutritional requirement and RDA. Formulation of RDA. Dietary guidelines. Reference Man and Reference Woman. Drawbacks of RDA. 4. Energy in human nutrition. Idea of energy and it unit. Energy balance. Deficiency and excess of energy. BMR. Factors influencing BMR. SDA 5. Concept of Body composition. Body composition at different level. Brief idea about "Body composition and its change through life cycle". 6. Physiology of pregnancy. Nutritional requirement	BD BD BG BD BG

	during pregnancy and modification of existing diet. Antenatal care and schedule. Deficiency of nutrient (energy, protein, iron, folic acid, calcium, iodine) and its impact on pregnancy. Non-nutritional factors affecting pregnancy outcome. Importance of adequate weight gain during pregnancy. Adolescent pregnancy. Common complications during pregnancy (nausea, vomiting, pica, hypertension, obesity, food aversions, diabetes etc). 7. Nutritional requirement during lactation. Dietary management. Hormonal control of lactation. Preparation for lactation. Breast feeding. Colostrum, its composition and its importance in feeding. Basic principles of breast feeding. Advantages and complications of breast feeding. Galactogogue. **FOOD SCIENCE** **UNIT-II** **1.CARBOHYDRATES:** General Definition, Classification according to C- no, Saccharides- Definition as a special group of carbohydrates. a) Monosaccharides (Glucose, Fructose, Galactose) Structure (anomers, epimers, Fischer Projection St., Ring St.) properties - oxidation, reduction, mutarotation,acylation,reaction with compounds like NH X(Osazone), Glucose to Fructose Conversion & vice versa, reducing properties of sugar b) Disaccharides (Sucrose, Maltose, Lactose) Glycosidic linkage, Structure, Properties – inversion of	BG SS

Term I HalfI July- September	sugar, reducing & non-reducing sugars. c) Polysaccharides (Dextrin, Starch, Glycogen) 1,4 & 1,6-glycosidic linkage, monomers, structures of amylose & amylopectin, differences in structure of the polysaccharides, hydrolysis of polysaccharides (enzymatic & chemical) Sources of carbohydrates, daily requirements, function, hypo-& hyper-effects on human health, Digestion & absoption, blood glucose & effects of different carbohydrates on blood glucose, Glycemic index. **2. PROTEINS:** General structure of amino acids, essential amino acids (structure), first & second class protein, Classification of proteins, Classification of amino acids according to chemical nature, Polypeptides, primary & secondary structure of proteins, Zwitter ion, isoelectric point, chemical denaturation. Sources of proteins, daily requirements, function, hypo- & hyper- effects on human health, Digestion & absorption, assessment of protein quality (BV,PER,NPU).	BD

Term 1,Half 2 (November-December)	**HUMAN NUTRITION** 8. Nutritional requirement during infancy. Advantages of exclusive breast feeding during infancy. Duration of breast feeding. Introduction to supplementary foods. Initiation and management of weaning. Preparation of formula. Bottle feeding. Mixed feeding. Artificial feeding. Circumstances at which bottle feeding is to be given. Nutritional problems during infancy and practical approaches to combat the problem. **FOOD SCIENCE** **3.LIPIDS:** Definition, FFA, essential fatty acids, fatty acids & their importance, PUFA, MUFA, SFA, Properties - Iodine value, Saponification value, Acid value, hydrolysis, rancidity, hydrogenation. Sources of proteins, daily requirements, function, hypo- & hyper- effects on human health, Digestion & absorption. **4.DIETARY FIBRE**: Classification, sources, composition, properties & nutritional significance. **5.MINERALS & TRACE ELEMENTS**: Physiological role, requirement, source, deficiency and excess (calcium, phosphorus, iron-absorption and factors affecting iron absorption, fluoride, zinc, selenium, iodine, chromium)	BG DD BG BG
	HUMAN NUTRITION	

Term 2, Half 1 (January-March)	9. Concept of growth chart. Use of growth chart. 10. Nutritional requirement and management of preterm and low birth weight baby. Feeding problems LBW baby. 11. Nutritional requirement and management of toddlers, pre-school, school going children, adolescents. Common nutritional problems of pre-school, school going children, adolescents. **FOOD SCIENCE** **6. VITAMINS:** physiological role, requirement, sources, deficiency & excess. **7. WATER:** Function, requirement, water balance, positive & negative water balance, water loss& gain, obligatory water loss, regulation of water balance.	BD SS BG DD
Term 2, Half 2 (April-June)	Revision Classes are held	1st year Test Exam

ACADEMIC CALENDER SUBJECT- FNTA SESSION- 2016-2017		
PART-I **PAPER- II; UNIT-I; (THEORETICAL); F.M.-50**		
SESSION	**TOPIC**	**Teacher**

Term 1, Half 1 (July-October)	1. Introductory studies on structure and function of **cells**: Nucleus, cell membrane, mitochondria, golgi body, ribosome, lysosome, endoplasmic reticulum. 2. Introductory studies on structure and function of **tissues**: connective tissue, epithelial tissue. 3. **Blood** and its composition. Blood group, Rh factor. Blood clotting. Basic mechanism of blood clotting. Blood transfusion. 4. **Cardiovascular system**: Anatomical structure of heart. Brief idea about circulation. Cardiac cycle. Heart rate and factors affecting it. Cardiac output and factors affecting it. Blood pressure and factors affecting it. 5. **Gastro-intestinal system**: Anatomical structure and function of G I system. 6. **Reproductive system**: Anatomical structure and function of sex organs. Spermatogenesis. Oogenesis. Role of hormones. Menstrual cycle. Pregnancy. Parturition. Lactation. Menopause.	MS BG BD DD
Term 1, Half 2 (November-December)	7. **Excretory system**: Structure and function of kidney. Brief idea about the role of kidney in homeostasis. Formation of urine. Normal and abnormal constituents of urine. Role of skin in regulation of body temperature. 8. **Respiratory system**: Brief idea about respiratory system. Different capacities and volumes. Mechanism of respiration. Transport of O_2 and CO_2 in blood. Acclimatization. Respiratory dead space.	MS MS

Term 2, Half 1 (January-March)	9. **Nervous system**: Elementary idea about anatomy of Nervous system. Introductory idea about central nervous system, peripheral nervous system, autonomic nervous system. Regulation of hunger, thirst. Anatomical structure of eye. 10. **Musculo-skeletal system**: Anatomical structure and function of skeletal, smooth and cardiac muscle. Mechanism of muscle contraction. Histology of bone and teeth. Anatomical structure of teeth. 11. **Endocrine system**: brief idea and definition of endocrine secretion. Different glands and their secretions: Pituitary gland, thyroid gland, parathyroid gland, adrenal gland, pancreas, sex hormones. Excess and deficiency symptoms.	MS MS MS
Term 2, Half 2 (April-June)	Revision Classes are held	1st Year Test Exam

Term 2, Half 1 (January-March)	12. **Nervous system**: Elementary idea about anatomy of Nervous system. Introductory idea about central nervous system, peripheral nervous system, autonomic nervous system. Regulation of hunger, thirst. Anatomical structure of eye. 13. **Musculo-skeletal system**: Anatomical structure and function of skeletal, smooth and cardiac muscle. Mechanism of muscle contraction. Histology of bone and teeth. Anatomical structure of teeth. 14. **Endocrine system**: brief idea and definition of endocrine secretion. Different glands and their secretions: Pituitary gland, thyroid gland, parathyroid gland, adrenal gland, pancreas, sex hormones. Excess and deficiency symptoms.	MS MS MS
Term 2, Half 2 (April-June)	Revision Classes are held	1st Year Test Exam

PART-I PAPER- II; UNIT-II; (PRACTICAL); F.M.-50		
SESSION	**TOPIC**	**Teacher**
Term 1, Half 1 (July-October)	• Measurement of blood pressure and pulse rate. • Determination of Haemoglobin by Sahli's method. • Preparation of blood film and identification of WBC.	MS
Term 1, Half 2 (November-December)	• Determination of bleeding time and clotting time of blood. • Blood grouping.	MS
Term 2, Half 1 (January-March)	• Identification of prepared slides (a) Lungs. b) suprarenal gland, c) thyroid, d) pituitary, e) testis, f) ovary, g) kidney, h) liver, i) pancreas, j)small intestine k) large intestine, l) spinal cord, m) cerebellum.	MS
Term 2, Half 2 (April-June)	Revision Classes are held	

PART-I PAPER- II; UNIT-II; (PRACTICAL); F.M.-50		
SESSION	**TOPIC**	**Teacher**
Term 1, Half 1 (July-October)	• Measurement of blood pressure and pulse rate. • Determination of Haemoglobin by Sahli's method. • Preparation of blood film and identification of WBC.	MS
Term 1, Half 2 (November-December)	• Determination of bleeding time and clotting time of blood. • Blood grouping.	MS
Term 2, Half 1 (January-March)	• Identification of prepared slides (a) Lungs. b) suprarenal gland, c) thyroid, d) pituitary, e) testis, f) ovary, g) kidney, h) liver, i) pancreas, j)small intestine k) large intestine, l) spinal cord, m) cerebellum.	MS
Term 2, Half 2 (April-June)	Revision Classes are held	

ACADEMIC CALENDER

DEPARTMENT – FOOD AND NUTRITION

SESSION – 2016-2017

PART – II

PAPER - III (Unit – I & II)

FULL MARKS-50+50

SESSION	**TOPIC**	**Teacher**

Term 1, Half 1, (September-October)	**COMMUNITY NUTRITION** **(UNIT-I)** 1. **Introduction to community nutrition**. Concept of community. Characteristics of community, Types of community. Different factors affecting health of the community (like social, cultural, economic, political and environmental factors). 9. **Nutritional intervention program** to combat malnutrition. 10. **Nutrition Education**: (elementary idea) Reason for Nutrition Education, objectives. **PUBLIC HEALTH & EPIDEMIOLOGY** **(UNIT-II)** 1**. Health & its dimensions:** definition of health, different dimension of health. Positive health versus absence of disease.	BG BG SS BD

	2**. Secondary sources of community health data:** Sources of relevant vital statistics of infant. Child & maternal mortality rate. Brief idea about epidemiology of nutritionally related diseases (amoebiasis, hyperlipidaemia, clotting disorder, beriberi, rotaviruus infection). 7. **Community food protection:** Epidemiology of food borne diseases. Mode of transmission. Prevention & control (Salmonellosis, Shigellosis, typhoid, botulism, Cholera, E.coli food poisoning, Staphylococcal food poisoning).	GT GT
Term 1, Half 2 (November-December)	**<u>COMMUNITY NUTRITION</u>** 2**. Direct nutritional assessment of human**: Nutritional anthropometry, Clinical signs, Biochemical and Biophysical methods. 3. **Nutritional Anthropometry**: its need and importance in brief. Parameters of nutritional anthropometry and techniques of measurement. Growth chart and its usage. 4. **Clinical Signs**: its need and importance in brief. Clinical signs of PEM, vitamin A deficiency, IDD, Anemia. 5. **Diet Survey**: its need and importance in brief. Important factors for diet survey in	SS BG

	brief (like trained personnel, sampling,	
	method etc). Different methods for conducting diet survey. Concept of consumption unit. Adequacy of diet with respect to RDA. Food security. 7. Concept of surveillance: food and nutrition surveillance, need for surveillance, objectives of surveillance, indicators of nutritional surveillance, importance and use of surveillance. PUBLIC HEALTH & EPIDEMIOLOGY 3. Public health & epidemiology:- definitions, Components of epidemiology and aims, different tools & measurements of epidemiology. Brief idea about epidemics. Epidemiological methods: analytical epidemiology - case control & cohort study, epidemics and its types, vital statistics, epidemiological triad, demography and life expectancy. 4. Communicable & infective disease control: definitions related to communicable diseases. Infection, contamination, decontamination, disinfection, transmission (direct & indirect) brief idea about different vector borne diseases- brief idea about AIDS, malaria, poliomyelitis, dengue, tuberculosis, MMR, chicken pox, pertussis, chikungunya, epidemiological principles of disease prevention and control	DD GT GT

Term 2, Half 1 (January- February)	**COMMUNITY NUTRITION** 6**. Malnutrition**: its sociological factors. Food production and availability, socio-economic factor, cultural influence, food consumption, population problem with respect to food production and availability, medical and educational services, psychological factor, emergency and disaster condition. Prevention of malnutrition. 8. **International, national, regional Agencies and Organizations** : WHO, FAO, CARE,UNICEF, International Red Cross, NIN, ICMR, ICAR,CFTRI, FNB, NNMB, Indian Red Cross, CSWB, Nutrition Foundation of India. **PUBLIC HEALTH & EPIDEMIOLOGY** **5. Immunization:-** Definition**.** Host defenses and immunity. Immunizing agents: its types. National immunization schedule- its importance. Immunization for adults &	DD BD GT

	foreign travelers. Hazards of immunization. Health advice to the foreign travelers. 6. Community water & waste management: Importance of water to the community. Sources of water. Concept of water pollution. Purification of water in small & large scale. Drinking water handling & safe drinking water. Water borne diseases (diarrhea, dysentery, arsenic toxicity). Waste-Types and methods of disposal, sewage disposal and treatment, Treatment and disposal technologies of health care wastes.	GT
Term 2, Half 2 (March-April)	Revision Classes are held (Theory and Practical)	1st year Test Exam

ACADEMIC CALENDER

DEPARTMENT – FOOD AND NUTRITION

SUBJECT- FNTA

SESSION – 2016-2017

PART – II

PAPER - IV (Unit – I & II)

FULL MARKS (50+50)

SESSION	TOPIC	Teacher
Term 1, Half 1, (September-October)	**FOOD COMMODITIES** **UNIT-I** 1. **Cereals & their products**: Structure, nutritive value of cereals. Rice - composition, processing, Brief idea about different fermented rice products. Wheat: - composition, processing. Brief idea	4 weeks Puja Vacation

	about different wheat products - millet like Jowar, Ragi, Bajra. Role of cereals in cookery. Gelatinization, Gluten formation. Breakfast cereal. 2. **Pluses**: composition, nutritive value, processing (soaking, germination, fermentation). Toxic constituent present in pulses. Pulse cookery. Factors affecting cooking quality. Role of pulses in cookery.	

	3. **Milk and milk products**: composition of milk. Nutritive value of milk. Physical properties of milk. Pasteurization of milk. Microbial spoilage of milk. Effect of enzyme, acid and heat on milk. Role of milk in cookery. Different fermented milk products like cheese, butter, curd. Brief idea about different non fermented milk products like ice cream, skimmed milk, toned milk, double toned milk, sweetened condensed milk, recombined milk etc. 4. **Egg:** Structure, nutritive value, composition. Effect of heat on egg, and factors affecting coagulation of egg protein. Hard and soft egg. Egg foaming and factors affecting egg foaming. Preservation of egg, Role of egg in cookery. **Community Nutrition (Practical)** **(UNIT – II)** 1.Anthropometric Measurement of infant- Length, Weight, Circumference, Chest, Mid- upper arm circumference, precautions to be taken. Comparison with norms and interpretation of the nutritional assessment date and its significance. Weight for age, height for age, weight for	

	height, Z scores body Mass Index (BMI), Waist-Hip Ratio (WHR).	
Term 1, Half 2 (November-December)	**FOOD COMMODITIES** 5. **Meat, Fish, Poultry:** classification of meat. Nutritive value of meat. Ageing, tenderization, artificial tenderization, curing of meat. Smoking of meat Fish:-composition, nutritive value, selection .spoilage of fish. Poultry:-processing, classification, composition. 6. **Vegetables and Fruits:** classification of Vegetables. Nutritive value, composition of vegetables. Vegetable cookery. Effect of cooking on pigments present in vegetables. Loss of nutrient during cooking. Prevention of loss of nutrient. Storage of Vegetables. Classification of Fruits. Nutritive value, composition of Fruits. Pigments present in fruit. Bitterness in fruit. Ripening of fruits: Browning reaction. 7. **Sugar and its products:** Properties of sugar. Different sugar and their product. Crystallization of sugar. Factors affecting crystallization. Brief idea about different crystalline and non-crystalline	Annual Spots & 1 week winter Recess

	candies. Caramelization. Role of sugar in cookery. Different natural and artificial sweeteners. 8. F**ats and Oils:** Classification & Nutritive value of fats and Oils. Different fatty acids. Structure of fat. Composition of fat. Chemical properties. Analysis of fats & oils. Degradation of fat, factors affecting it & its prevention. Smoking temperature of fat. 9. **Food Preservation:** Objectives of preservation in brief. Different methods of preservation. Basic idea of food spoilage. Preparation of preserved products like jam, jelly, squash, pickles etc. **Community Nutrition (Practical)** 2. Growth charts-plotting of growth charts, growth monitoring and promotion. 3. Clinical assessment and signs of nutrient deficiencies, Anaemia, Rickets, B-Complex deficiencies. 4. Estimation of food and nutrient intake-Household food consumption data, per consumption unit, 24 hours dietary recall, 24 hours record. Weighment method, food diaries, food frequency data, use of each of the above, information available through each individual, collection of data, estimation	

	of intakes.	
Term 2, Half 1 (January-February)	**FOOD COMMODITIES** 10. **Food Additives:** Brief idea about food additives. 11. **Leavening agent:** Brief idea about different leavening agent like baking powder, egg etc. 12. **Food adulteration & Food Standards:** Different food standards: BIS, Agmark, FPO, PFA, MPO etc. basic idea about food adulteration, quality. Factors responsible for food adulteration. 13. **Convenience Food:** Basic idea, types, role of convenience food. 14. **Spices:** Different spices, their composition, medicinal value & use. Basic idea about herbs. 15. **Beverages:** Classification Tea: nutritional aspect, classification, processing of tea, different types of tea. Coffee: composition, processing, nutritional aspect of coffee. Bitter substances present in coffee, different coffee products. Chocolate & cocoa: processing, composition & nutritional	3rd year Test Exam, 2nd year Test Exam

	aspect. Alcoholic beverages: beer, rum, wine- their processing. Carbonated beverages. **<u>Community Nutrition (Practical)</u>** 5.Community field survey.	
Term 2, Half 2 (March-April)	Revision Classes are held (Theory and Practical)	1st year Test Exam

ACADEMIC CALENDER

DEPARTMENT – FOOD AND NUTRITION

SUBJECT- FNTA

SESSION – 2016-2017

PART – III

PAPER - V

SESSION	TOPIC	Teacher
	<u>Unit I:- Nutritional Biochemistry (50)</u>	

Term 1,Half 1, (July-October)	**1.<u>ENZYMES & COENZYMES</u>: ENZYMES:** Definition & Classification, Kinetics (Gibbs free energy change, Reaction initiation energy), Michalies-Menten equation, Reciprocal plot & its significance, Vmax & Km, substrate specificity, enzyme inhibition (irreversible- Penicillin inhibition, reversible explained from Reciprocal plot, allotter-ribonucleotide reductase inhibition by nucleotides), isozymes-ex. LDH. **COENZYMES:** <u>Definition, Biochemical Functions of</u>: NAD, NADP, FAD, CoA, Tetrahydrofolate, TPP. Names of the Vitamines present in those coenzymes, **2.<u>CARBOHYDRATES:</u>** Glycolysis, Citric acid cycle, Electron transport chain (brief idea), glycogenesis, glycogenolysis, gluconeogenesis.HMP Shunt. **3.<u>LIPID</u>:** Beta-Oxidation, (alpha and omega oxidation-definition only), Synthesis & utilization of ketone bodies,	DP MS MS

	Ketosis, Causes of fatty liver. **Unit II:Food Microbiology** (50) **1.Microscope: -** Different parts of microscope and its functions. **2.Cultivation of Bacteria**:-Nutritional requirements of micro-organisms, types of growth media (selective, differential, enric media-definition with example), Pure culture methods (streak pl spread plate pour plate, slant culture), Anaerobic cultivation of bacteria. **3.Growth of Bacteria**:-Definition, growth phase, direct and ind measurement of growth, Factors affecting growth (pH, temp an oxygen).	DP DP DP
Term 1,Half 2 (November-December)	**NUTRITIONAL BIOCHEMISTRY- UNIT-I** **4.PROTEIN:** Tertiary & Quaternary structures of protein with Haemoglobin & Collagen as examples, Deamination & Transamination, amino acid metabolism. **5.NUCLEIC ACID :** Structure of Purines & Pyrimidines, Nucleosides & Nucleotides, Formation of Nucleic Acid Chain from Nucleotides, Importance of Thymine in DNA structure, Types of RNA & their functions (in brief), Structure of t-RNA, Codons, Definition of Central Dogma(Replication, Transcription, Translation - elementary idea only) & Machineries needed in each step(only names of the	MS MS

	enzymes and coenzymes). **FOOD MICROBIOLOGY UNIT-II** **4.Stain and staining techniqu**- dye (Chromophore, auxochrome-definition with example). Classification of stains, principles of staining, simple staining, negative staining, differential staining (Gram staining and acid fast staining). **5. Morphology of Bacteria**:- slime layer, capsule, cell wall, flagella, pili, fimbriae, cell membrane, ribosome, cytoplasmic inclusions(inorganic), endospore (structure, formation and germination).. **6.Control of microbes**:-Sterilization, Disinfection, ntiseptics, detergents, Methods of sterilization-Physical (heat, ow temp, radiation, filtration). Chemical (alcohol, phenol, alogen, heavy metals, formaldehyde).	DP DP DP
Term 2, Half 1 (January-March)	**NUTRITIONAL BIOCHEMISTRY UNIT-I** **6. VITAMINES:** Structure & Biochemical roles, Deficiency disorders of Vitamin **A, D, E.K, B_1, B_2, B_6,** Folic acid, Pantothenic acid, Niacin & Vitamin C. **7.MINERALS:** Biochemical functions of Na, K, Ca, P, I, Fe, Se - Disorders related to Hyperactivity & Deficiencies of those elements. **8.CELLULAR TRANSPORT:** Preliminary idea about membrane permeability, Active & Passive transport,	MS MS

	Facilitated transport, a brief idea about gated-channels & membrane-bound transport protein. **<u>FOOD MICRIBIOLOGY UNIT-II</u>** **7.FOOD MICROBIOLOGY:-** milk as a growth medium of bacteria, normal microflora in milk, undesirable microbes in milk,Pasteurisation, phosphatase test, Methylene blue reduction test. Normal microflora of vegetables & fruits, meat, fish, egg, canned food, cereal &cereal products, enumeration of microbes present in food & milk. Outline of methods for detection of microorganisms in drinking water (presumptive, confirmatory and completed test).distinction between faecal and non faecal coliforms- IMVic test. Extrinsic & intrinsic parameters affecting growth & survival of microbes. **8..<u>Food borne diseases</u>**: - Food borne infection & intoxication. Different food borne diseases like Shigellosis, salmonellosis, *Clostridium Perfringens* food poisoning, Typhoid, *E.Coli* food poisoning, *Bacillus cereus* food poisoning-causative agent, symptoms, pathogenicity & preservation.	DP DP

Term 2, Half 2 (April-June)	Revision Classes are held	1st year Test Exam

ACADEMIC CALENDER DEPARTMENT – FOOD & NUTRITION SUBJECT- FNTA SESSION – 2016-2017 PART – III PAPER - VI (UNIT I&II) FULL MARKS: 50+50		
SESSION	TOPIC	Teacher

Term 1,Half 1, (July-October)	**DIET THERAPY UNIT-I** **1.Basic concept of diet therapy: -** different definitions related to diet therapy. **2.Routine Hospital Diet:-**Modification of normal diet into therapeutic diet. Purpose of diet therapy. Different modifications. **3.Diet with Energy Modification: -** Energy modification & nutritional care for weight management, identifying the overweight obese, aetiological factors contributing obesity, prevention & treatment of obesity. Low energy diet & balanced energy reduction. Underweight - aetiology, an assessment, high energy diets for weight gain. **DIET THERAPY UNIT II**	BD DD

	1. DIABETES MELLITUS: General introduction & classification, Factors responsible for diabetes, Role of hormones Characteristics of typeI &type II diabetes Treatment & dietary management of diabetes Complications associated with it. **2. FOOD ALLERGY:-** Introduction & definition related to food allergy, Predisposing factors of food allergy,Reasons for allergy, Classification of allergy, Allergic reaction (elementary idea) Symptoms of allergy, Role of food as allergen Treatment & dietary management of food allergy, with elimination diet.	BG BD

Term 1,Half 2 (November-December)	**DIET THERAPY UNIT-I** **4.DIET FOR FEBRILE CONDITION**:- Different causes of fever, Metabolic changes during fever (elementary idea), General dietary consideration, Causes, clinical features, treatment& dietary management of- Short time fever(influenza), Chronic fever (tuberculosis), Intermittent fever (Malaria). **5.DIET DURING SURGERY:-** General introduction, Pre & post operative diet (brief idea), Dietary management. **6.DISEASES OF LIVER:-** General introduction, Symptoms of liver disease, Reasons of liver diseases, Basic idea of liver function tests, Causes, clinical features, treatment& dietary management of- Infective hepatitis & jaundice, Cirrhosis of liver, Hepatic coma, Infantile billiary cirrhosis. **DIET THERAPY UNIT II** **3.CARDIO VASCULAR DISEASES**: General information & brief idea, Causes or factors of CHD in brief, Dietary management, symptoms in brief of the following: atherosclerosis, hypertension, hypercholesterolemia, IHD, Congestive cardiac failure.	BG DD DD BD

Term 2, Half 1 (January- March)	**DIET THERAPY UNIT I** **7.GALL STONE DISEASE:**General introduction, Type of stones, Dietary management. **8.PEPTIC ULCER:-**General introduction of peptic ulcer disease,Causes of peptic ulcer disease, Mechanism of ulcer formation, Symptoms of peptic ulcer disease,Treatment & dietary management. **9.INTESTINAL DISORDERS:-** General introduction and dietary management of different intestinal disorders- **Constipation**:- causes, complication, type (in brief), Dietary management.**Flatulence:-**causes, treatment, dietary management. **Diarrhoea:-**causes, physiological disturbance in the body during Diarrhoea. Different types of Diarrhoea, Symptoms, Complication. Prevention & treatment.ORS. **Steatorrhoea: -** causes, treatment, dietary management. **Ulcerative colitis**-causes, symptoms, treatment & dietary management. **Irritable bowel syndrome**: - causes, symptoms, dietary management. **DIET THERAPY UNIT II** **4.RENAL DISEASES:-** General introduction. Causes, symptoms in brief & dietary management of the following: Type I or Glomerulonephritis, Type II or Nephrotic Syndrome, Acute & chronic renal failure, Renal	BG DD BD BG

	calculi.	
Term 2, Half 2 (April-June)	Revision Classes are held	1st year Test Exam

ACADEMIC CALENDER DEPARTMENT –FOOD & NUTRITION SUBJECT- FNTA SESSION – 2016-2017 PART – III PAPER -VII UNIT- I & II FULL MARKS- 50+50		
SESSION	TOPIC	Teacher
Term 1,Half 1, (July-October)	**NUTRITIONAL BIOCHEMISTRY UNIT I** GROUP A:-QUALITATIVE ESTIMATION 1. Qualitative estimation of Carbohydrate(Mono,di and poly saccharides) Glucose, Fructose, Sucrose, Lactose, Starch, Dextrin. 2.Colour reactions of Protein GROUP B:- QUANTITATIVE ESTIMATION	MS

	1. Standard curve of Protein by Biuret method using BSA. 2. Standard curve of Protein by Folin Phenol method using BSA. 3. Estimation of unknown Protein from egg or serum protein.	

	FOOD PRESERVATION UNIT II 1. Introduction to food preservation and different methods of food preservation. Purpose of food preservation. 2. Use of natural and chemical preservatives in preparation of different preserved products: Jam, Jelly, Squash, Pickles, Murabba etc.	BG
Term 1,Half 2 (November-December)	**NUTRITIONAL BIOCHEMISTRY UNIT I** GROUP A- QUALITATVE ESTIMATION 3.Qualitative estimation of Fat.Solubility test, Unsaturation test, Saponification test, Test with soap & acrolin layer. GROUP B:- QUANTITATIVE ESTIMATION 4.Standard curve of PNP 5.Preparation of Buffer. 6.Quantitative estimation serum acid phosphatase. 7.Quantitative estimation serum alkaline phosphatase. **FOOD PRESERVATION UNIT II** 3.Use of sun drying for preservation of food. 4.Preparation of fermented food product.	MS BG,BD,DD

Term 2, Half 1 (January- March)	**NUTRITIONAL BIOCHEMISTRY UNIT I** GROUP A- QUALITATIVE ESTIMATION 4.Chromatographic separation of Amino Acids from mixture of amino acids & determination of Rf value. GROUP B:- QUALITATIVE ESTIMATION 8.Quantitative estimation of vitamin C in lemon juice. 9.Quantitative estimation of glucose using fehling solution. 10. Determination of acid value of fat. **FOOD PRESERVATION UNIT II** 5.Visit:- Milk industry visit Food testing lab visit.	MS GT, BG, DD,BD
Term 2, Half 2 (April-June)	Revision Classes are held	1st year Test Exam

ACADEMIC CALENDER

DEPARTMENT – FOOD &

NUTRITION SUBJECT- FNTA

SESSION – 2016-

2017 PART – III

PAPER - VIII UNIT I,

II,III FULL MARKS:

35+30+35

SESSION	TOPIC	Teacher
Term 1,Half 1, (July-October)	**DIET THERAPY PRACTICAL UNIT I** 1. Introduction to therapeutic nutrition, its objectives. Different modification techniques (demonstration). 2. Planning and preparation of normal diet. 3. Planning and preparation of clear fluid and full fluid diet. 4. Planning and preparation of soft diet. **FOOD MICROBIOLOGY UNIT II** 1.Basic idea of process of sterilization. 2.Preparation of Nutrient agar media. **PROJECT & SEMINAR UNIT III** 1.Review and project work	BG,DD,BD DP MS,DD,BD,DP,BG

Term 1,Half 2 (November- December)	**DIET THERAPY UNIT I** 5.Planning and preparation of diets for the following condition :Jaundice, Peptic Ulcer, Diabetes, Fever. **FOOD MICROBIOLOGY UNIT II** 3. Inoculation of one gram positive and one gram negative bacteria 4. Gram Staining. **PROJECT & SEMINAR** 1.Review and project work	BG,DD,BD DP BG,DD,BD,DP
Term 2, Half 1 (January- March)	**DIET THERAPY UNIT I** 6 .Planning and preparation of diets for the following condition: CHD, Gout, Renal Failure(acute or chronic),Obesity. **PROJECT & SEMINAR** 2. Seminar presentation.	BG,BD,DD BG,BD,DD,DP,MS
Term 2, Half 2 (April- June)	Revision Classes are held	1st year Test Exam

ACADEMIC CALENDER

DEPARTMENT –FOOD AND NUTRITION

SUBJECT: FOOD AND NUTRITION(GENERAL)

SESSION – 2016-2017

PART – I

PAPER -I

UNIT-I& II

SESSION	TOPIC	Teacher
Term 1,Half 1, (July-October)	**UNIT-I** NUTRITION SCIENCE: 1. Food in relation to health, functions of food 2. Carbohydrates- Classification with examples, nomenclature(brief), study of important properties of glucose, fructose, sucrose, lactose & galactose - Sources, functions, Deficiency, Excess 3. Proteins-classification with examples, composition, EAA, General properties of protein, Sources, Functions, Deficiency, Excess **UNIT-II** *Group A(physics and chemistry)* 1. Measurement of mass and, weight, Common and Spring Balance. 2. Viscosity, Specific Gravity, Surface Tension-Definition, units(no formulae), biological examples *GroupB (Physiology including Biochemistry)* 1. Animal cell: Definition, Structure and functions of different parts 2. Blood: Definition, Composition, Blood Corpuscles, Functions, Blood group, Rh factor,	BD,DD,BG MS MS

	Agglutination *Group-c (Cooking methods and Kitchen Sanitation)* 1. Different methods of cooking-Moist heat, Dry heat and combination method- Principles, Methodology, Uses, Common Foods, merits and demerits	BG
Term 1,Half 2 (November-December)	**UNIT-I** NUTRITION SCIENCE: 4. Lipids-Definition, Classification with examples, EFA, Study of important properties of fats and oils, Saponification Value, Iodine value, Sources, Functions, Deficiency, Excess 5. Vitamins: Fat soluble-A,D,E,K Water soluble vitamins: Thiamin, Riboflavin, Niacin, Pyridoxin, Vit C, B_{12}:Sources, Functions, Deficiency, Disease and Hypervitaminosis **UNIT-II** *Group A(physics and chemistry)* 3. Calorimetry- Definition, Types – Direct& Indirect Calorimetry, Application in energy metabolism, Bomb Calorimeter 4. Microwave oven-Principles, uses, merits, demerits *GroupB (Physiology including Biochemistry)* 3. Digestive system: Structures involved in digestive system(mouth, oesophagus, stomach, small intestine, large intestine, Liver, Pancreas, Gall bladder), their functions, Composition of different digestive juices and their functions. 4. Digestion and absorption of carbohydrate, Protein and Fat	BG,DD,BD DP

	Group-c (Cooking methods and Kitchen Sanitation) 2. Planning of ideal kitchen ,safety aspects , Traditional & Modern appliances	
Term 2, Half 1 (January- March)	**UNIT-I** 6. Minerals: Ca, Fe, K, Na, P, I, F- Sources, Functions, Deficiency, Diseases and excess (Absorption of Ca and Fe only) 7. Water and Dietary Fibre- Sources, Functions, Deficiency, Diseases **UNIT-II** Group A(physics and chemistry) 5. General concept of acids, Bases, Salts, Conjugate acids, Conjugate bases, pH, buffer solution , Neutralisation, Acid base indicators, Molar solution, Normal solution , Formal Solution 6. Diffusion, Osmosis, Osmotic Pressure, isotonic Solution- Definition and examples 7.Colloids-Definition, Types of colloidal system, Important properties of colloidal sols, Dialysis GroupB (Physiology including Biochemistry) 5. Metabolism: Glycolysis, TCA Cycle, Glycogenesis, Glycogenolysis, Gluconeogenesis,Cori cycle, Deamination, Transamination Group-c (Cooking methods and Kitchen Sanitation) 3. Brief idea on kitchen garden-Planning , Uses.	BG,DD,BD BG,DD,BD DP

Term 2, Half 2 (April-June)	Revision Classes are held	1st year Test Exam

ACADEMIC CALENDER DEPARTMENT –FOOD AND NUTRITION SUBJECT: FOOD AND NUTRITION(GENERAL) SESSION – 2016-2017 PART – II PAPER -II&III UNIT-I		
SESSION	TOPIC	Teacher

Term 1,Half 1, (July-October)	**UNIT-I** FOOD SCIENCE: 1. Definition of Food, Nutrition, nutrient, health, nutritional status, balanced diet, malnutrition, energy(units) 2. Definition of BMR, Factors controlling BMR, Energy Balance, RDA 3. Basic Five Food groups: Types, Composition, Nutritional significance, role of cookery of Cereals, Pulses, Milk and milk products, Meat, Fish, Egg, Vegetables & fruits, nuts, oils and sugar. **UNIT-II** THERAPEUTIC NUTRITION 1. Basic Concept of diet therapy, Principles and classification of the therapeutic diet **PAPER-III(PRACTICAL)** 1. Elementary idea of weights and measures. 2. Processes involved in food preparations- Boiling, Roasting, Stewing, Poaching, Frying, Grilling, Pressure Cooking(one of each type) 3. Preparation of Supplementary foods	DD BG BD BG DD

	for infants(minimum two)	
Term 1,Half 2 (November-December)	**UNIT-I** FOOD SCIENCE: 4. Principle and objectives of meal Planning 5. Nutritional requirement(RDA), Dietary guidelines of Pregnant and Lactating Women, Infants (Weaning, Supplementary food),Preschool children, School Children(School Lunch Programme), Adult males, females, Old age people **UNIT-II** THERAPEUTIC NUTRITION 2. Hospital diet: regular, Soft, Fluid, Special Feeding Methods-Advantages and Disadvantages. 3. Dietary management in Gastrointestinal Disease (Diarrhoea, Constipation, Gastritis, Peptic ulcer& Flatulence), Fever(short term), Diabetes Mellitus(Type II-NIDDM), Heart disease (Hypertension, Atherosclerosis, Hyperlipidaemia), Liver Disease (Infective Hepatitis, Cirrhosis of Liver), Gout, Obesity (including assessment indices), Underweight **PAPER-III(PRACTICAL)** 4. Planning and Preparation of Fluid diet, Soft and Semisolid diet(one of each type) 5. Preparation of cereals, Pulses, Vegetables, Egg, Milk, Fish, Nuts (one from each group) 6. Preparation of ORS	BG DD,BD DP MS

Term 2, Half 1 (January- March)	**UNIT-I** FOOD SCIENCE: 6. Deficiency Diseases (Nutritional Anaemia, PEM,IDD,VAD)-Aetiology, Prevalence, Clinical findings, Prevention& treatment **UNIT-II** THERAPEUTIC NUTRITION 4. Food allergy: Definition, Sources, Symptoms, Diagnosis, Treatment, Food Intolerance **PAPER-III(PRACTICAL)** 7. Preparation of Jam, Jelly, Squash, Pickles 8. Planning of a day's diet for a pregnant and lactating mother 9. Planning and preparation of a day's diet for the following conditions-Peptic Ulcer, Fever, Hypertension, Diabetes mellitus(Type-II,NIDDM)	BG SS
Term 2, Half 2 (April-June)	Revision Classes are held	1st year Test Exam

ACADEMIC CALENDER

DEPARTMENT –FOOD AND NUTRITION

SUBJECT: FOOD AND NUTRITION(GENERAL)

SESSION – 2016-2017

PART – III

PAPER -IV

UNIT-I&II

SESSION	TOPIC	Teacher

Term 1,Half 1, (July-October)	**UNIT-I** Group A- COMMUNITY NUTRITION 1. Concept of Community 2. Methods of assessment of nutritional Status- Anthropometry, Clinical, Biochemical, Diet Surveys, Vital health statistics Group B(Food Microbiology & Sanitation) 1. Elementary structure and characteristics of microbes- Bacteria, Virus, Fungi including Mold, Yeast and Protozoa. 2. Food Spoilage- Cereals, Pulses, Vegetables & Fruits, Milk and Milk Products, Fleshy Foods, Fats and oils **UNIT-II** PRACTICAL: 1. Diet Survey in a household of slum or rural area	BD DD DP BG

Term 1, Half 2 (November-December)	**UNIT-I** Group A- COMMUNITY NUTRITION 2. Role of National and International Organization in improving Community Health: WHO, FAO, UNICEF,CARE, NIN, CFTRI, ICMR 3. Nutrition Education in community- Definition, Methods, Uses Group B(Food Microbiology & Sanitation) 3. Food Borne infections and infestations- Causative Organisms, Symptoms, Mode of Transmission, Methods of Prevention 4. Food Preservation- Definition, Objectives, Methods- main principle, procedure, common examples **UNIT-II** PRACTICAL: 2. Plotting of Growth Chart	SS SS SS SS
Term 2, Half 1 (January-March)	**UNIT-I** Group A- COMMUNITY NUTRITION 5. Current National Nutrition Intervention Programmes in India- SNP, ANP, ICDS, Mid Day Meal, NIDDCP, NPPNB, NNAPP Group B(Food Microbiology & Sanitation) 5. Food Adulteration- Definition, Types, Intentional adulterants & Method of detection, Food Laws and Food Standards- PFA Act, AGMARK, FPO, MPO, Codex Alimentarius, Consumer Protection Act, HACCP **UNIT-II** PRACTICAL: 3. Identification of unknown microbes(Prepared Slides)	DD BG DP

Term 2, Half 2 (April-June)	Revision Classes are held	1st year Test Exam