

SARDAR PATEL UNIVERSITY
Programme: MSC (Zoology)
Semester: IV
Syllabus with effect from: June 2011

Paper Code: PS04EZOO01	Total Credits: 4
Title Of Paper: Nutritional and Clinical Biochemistry	

Unit	Description in detail	Weightage (%)
1	Basic concept- composition of human body: Energy content of food. Measurements of energy expenditure. Energy requirements of man, woman and factor affecting energy requirements, Basal metabolic rate, factor affecting BMR.	
2	Carbohydrates- Dietary requirements and sources of available and unavailable carbohydrates and action of dietary fibers. Disorders of carbohydrate Metabolism: Diabetes mellitus. Glucose tolerance test, Glycogen storage disease.	
3	Proteins: protein reserves of body. Nitrogen balance studies and factor affecting it. Protein quality and essential amino acids. Cereal proteins requirement at different stages of development. Disorder of AA metabolism- phenylalaninemia homocystineuria and tyrosinemia. Disorders of purine and pyrimidine metabolism.	
4	Lipids - major classes of dietary lipids. Properties and composition of plasma lipo-proteins. Essential fatty acid and their physiological function. Clinical inter relationship of lipids, lipoproteins and apolipoproteins. Tests for apolipoproteins, HDL, LDL, cholesterols and Triglyceride disorder. Electrolytes and water balance	
5	Food processing and loss of nutrients during processing and cooking. Anti nutrients-naturally occurring food born toxicants, Protease inhibitors, hepatotoxins, allergens, toxins from mushroom, animal and sea foods. Protein energy malnutrition (PME)-Marasmus and Kwashiorkor disease. Starvation - protein metabolism in prolonged fasting, high proteins, low caloric Weight reducing diets. Obesity-factor leading to obesity - environmental and genetic. Role of leptin in regulation of body mass.	

Basic Text & Reference Books:

- Harper's Biochemistry.
- Food and nutrition by Swaminathan.
- Nutritional biochemistry and metabolism by Linten .
- Biochemistry with clinical correlation: Devlin.

