

SARDAR PATEL UNIVERSITY
Programme: MSC (Integrated Biotechnology)
Semester: IV
Syllabus with effect from: December 2011

Paper Code: PS04CIGB02	Total Credits: 3
Title Of Paper: Biochemistry – II	

Unit	Description in detail	Weightage (%)
1	Basic concepts of Metabolism : Anabolism, catabolism, Energy coupling reaction in biology, central role of ATP in metabolism. Enzymes: Definition of Enzymes, Coenzyme, Cofactor, holoenzyme, Apoenzyme. Classification of Enzyme with suitable examples.	
2	Vitamins and Lipid Metabolism : Definition and classification of Vitamins, Structure and biochemical functions of Vitamins, Diseases related to Vitamins, Vitamin like compounds. Importance of Triglycerol, fatty acid, anabolism and catabolism (saturated and unsaturated) along with the regulation.	
3	Amino acid metabolism: Source of amino acid, Protein turn over, Transamination and deamination reaction, metabolism of ammonia, urea cycle and its regulation, link between urea cycle and TCA cycle, Biosynthesis of essential and nonessential with regulation.	
4	Metabolic disorders and intermediary metabolism: metabolic disorder related to Carbohydrate metabolism, lipid metabolism, protein metabolism and nucleic acid metabolism, intermediary metabolism.	
	Practical:	
	<ul style="list-style-type: none"> • Estimation of Vitamin C by 2-6 Dichloroindophenol blue dye method. • Estimation of Iron by Wong's method. • Estimation of Urea by DAMO method. • Estimation of Creatinine by alkaline picrate method. • Estimation of Lipid by phosphovalinine method. • Estimation of total cholesterol by FeCl₃ or enzymatic method. • Separation of amino acid by circular paper chromatography 	

Basic Text & Reference Books:

- Biochemistry by Lubert Stryer, W. H. Freeman and Company. 4th /6th edition, 2000/2004 Hardback, ISBN 0716720094
- Fundamental of biochemistry by D Voet, J.G Voet and C.W Pratt, John Wiley & Sons, Inc., New York, 2nd edition, 2005
- Principles of Biochemistry by Albert Lehninger, W.H. Freeman & Company; 3rd edition (February 2000), ISBN-10: 1572591536.
- Harper's Biochemistry: Harper, 27th Edition, McGraw-Hill Publishing Co; Robert K. Murray, Daryl K. Granner, Victor W. Rodwell, 2006 ISBN-10: 0071461973.
- Out lines of Biochemistry by Conn E E , Stumps P E and and Doi, R.H., John Wiley and sons, Singapore, 5th Edition - 2001
- Principles of Biochemistry by Horton, Morgan, Secrimgeour, Perry, Rawn , pearson International edition – 4th edition ISBN 978-1-4058-2573-3
- TEXTBOOK OF MEDICAL BIOCHEMISTRY 7th edition (pb) 2007. CHATTERJEE M N and Rana shinde JAYPEE BROTHERS MEDICAL PUBLISHERS PVT LTD.. ISBN: 8184481349.

