Detailed Curriculum

Day 1: 04-09-2017
Overview and discussion of Bioenergetics and Biological oxidation + Metabolism of Carbohydrates (Portion1) highlighting the following topics
   1. Endergonic snf exergonic reactions, free energy, free energy change, ATP and other compounds as carriers of energy
   2. Electron transport chain: Components and organization of electron transport chain (ETC)
   3. Reaction of electron transport chain, redox potential, methods of electron transfer among the components of electron transport chain, and energy release during electron transport
   4. Oxidative phosphorylation
   5. Glycolysis
   6. Tricarboxylic acid (TCA) cycle

Day 2: 05-09-2017
Assessment (MCQs based) of Bioenergetics and Biological oxidation + Metabolism of Carbohydrates (Portion1)
In the university examination only 5 questions are to be asked from these topics. The student will be assessed on the basis of 50 MCQs, including 25 questions from Bioenergetics and Biological oxidation and 25 questions from Metabolism of Carbohydrates (Portion1)

Day 3: 06-09-2017
Overview and discussion of Metabolism of Carbohydrates (Portion2) highlighting the following topics
   1. Gluconeogenesis
   2. Glycogen metabolism
   3. The hexose monophosphate (HMP) pathway and other pathways of hexose metabolism
   4. Regulation of blood glucose level

Day 4: 07-09-2017
Assessment (MCQs based) of Metabolism of Carbohydrates (Portion2)
In the university examination only 5 questions are to be asked from these topics. The student will be assessed on the basis of 50 MCQs.

Day 5: 08-09-2017
Overview and discussion of Metabolism of Lipids (Portion 1) highlighting the following topics
   1. de novo synthesis of fatty acids
   2. Synthesis and storage of triacylglycerols in body
   3. Mobilization of stored triacylglycerols along with its regulation
   4. Oxidation of fatty acids
   5. Synthesis and utilization of ketone bodies
   6. Ketoacidosis and regulation of ketogenesis

Day 6: 09-09-2017
Assessment (MCQs based) of Metabolism of Lipids (Portion 1)
In the university examination only 6 questions are to be asked from this topic. The student will be assessed on the basis of 50 MCQs.

Day 7: 11-09-2017
Overview and discussion of Metabolism of Lipids (Portion 2) highlighting the following topics
   1. Synthesis of eicosanoids, their regulation and functions along with their biomedical importance
   2. Metabolism of phospholipids and sphingolipids
   3. Cholesterol metabolism
   4. Biosynthesis and fate of bile acids and their significance in health and disease
5. Plasma lipoproteins: Synthesis, transport, and fate of chylomicrons, VLDL, IDL, LDL, and HDL
6. Biochemical defects leading to fatty liver

**Day 8: 12-09-2017**
Assessment (MCQs based) of Metabolism of Lipids (Portion 2)
In the university examination only 6 questions are to be asked from this topic. The student will be assessed on the basis of 50 MCQs.

**Day 9: 13-09-2017**
Overview and discussion of Metabolism of Amino acids & Proteins + Metabolism of Nucleotides highlighting the followin topics
1. An overview of protein turnover in human body; nitrogen balance (positive and negative)
2. Inter-organ amino acid exchange in normal post absorptive state
3. Degradation of amino acids
4. An overview of amphibolic intermediates formed from the carbon skeleton of amino acids.
5. Concept of glucogenic and ketogenic amino acid
6. de novo Synthesis of purines and pyrimidines
7. Disorders associated with nucleotide metabolism
8. Natural and synthetic derivates of purines and pyrimidines and their role in health and disease

**Day 10: 14-09-2017**
Assessment (MCQs based) of Metabolism of Amino acids & Proteins + Metabolism of Nucleotides. In the university examination only 8 questions are to be asked from this topic. The student will be assessed on the basis of 50 MCQs.

**Day 11: 15-09-2017**
Overview and discussion of
1. Integration of regulation of metabolic pathways
2. Metabolism of Xenobiotics
3. Water & electrolyte balance; Acid Base regulation

**Day 12: 16-09-2017**
Assessment (MCQs based) of topics discussed on Day 11
In the university examination only 8 questions are to be asked from this topic. The student will be assessed on the basis of 50 MCQs.

**Day 13: 18-09-2017**
Overview and discussion of Biochemistry of Endocrine System highlighting the following topics
1. An overview of endocrine system
2. Pituitary and hypothalamic hormones
3. Thyroid hormone
4. Calcium Regulating Hormones
5. Adrenal Cortical Hormones
6. Adrenal Medullary Hormones
7. Male and Female Gonadal Hormones
8. Hormones of Pancreas

**Day 14: 19-09-2017**
Assessment (MCQs based) of Biochemistry of Endocrine System
In the university examination only 6 questions are to be asked from this topic. The student will be assessed on the basis of 50 MCQs.

**Day 15: 20-09-2017**
Overview and discussion of Biochemical genetics (Portion 1)
1. The structural basis of cellular information
2. Organization of DNA: chromosomes, karyotyping
3. Replication of DNA
4. Transcription (DNA-dependent RNA synthesis)

**Day 16: 21-09-2017**
Assessment (MCQs based) of Biochemical genetics (Portion 1)
In the university examination only 9 questions are to be asked from this topic. The student will be assessed on the basis of 50 MCQs.

**Day 17: 22-09-2017**
Overview and discussion of Biochemical genetics (Portion 2)
1. Translation (protein synthesis)
2. Regulation of gene expression in prokaryotes and eukaryotes
3. Molecular biology techniques
4. Oncogenes and their role in carcinogenesis
5. Genetic basis of disease
6. Important tumor markers and their clinical significance

**Day 18: 23-09-2017**
Assessment (MCQs based) of Biochemical genetics (Portion 2)
In the university examination only 9 questions are to be asked from this topic. The student will be assessed on the basis of 50 MCQs.