CONTINUOUS ASSESSMENT RECORDS

DEPARTMENT OF BIOCHEMISTRY

BANGLADESH MEDICAL STUDIES & RESEARCH INSTITUTE
"আল কোরান"
CARITUS
PRIMIUM NON NOCERE
ESTD-1984
স্থাপিত ঃ ১৩৯১

Uttara Adhunik Medical College
Dhaka, Bangladesh

Name of the Student :	
Roll No :	
U. M. :	Batch : A / B / C / D
Session :	

UTTARA ADHUNIK MEDICAL COLLEGE

House 34, Road 4, Sector 9, Uttara Model Town, Dhaka-1230, Bangladesh

Photo

DEPARTMENTOF BIOCHEMISTRY

1st Phase

Duration: 1½ year, Total Teaching Hours: 350 (Excluding Exams & Preparatory Leaves)

Syllabus (New Curriculum 2012)

Sl No.	Term	Card No.	Content
1	1st Term	Card-I Card-II	General Biochemistry Food, Nutrition, Vitamins & Minerals
2	2nd Term	Card-III Card-IV	Digestion, Absorption, Bioenergetics & Metabolism Renal Biochemistry, Body Fluid, Electrolytes & Acid-Base Balance
3	3rd Term	Card-V Card-VI	Clinical Biochemistry & Clinical Endocrinology (Va-Clinical Biochemistry, Vb- Clinical Endocrinology) Fundamentals of Molecular Biology & Genetics

Card - I

General Biochemistry *(Biophysics & Biomolecules)*

Name of the student :.....

Roll No :..... Batch : .....Session :.....

Period of Placement : From ..... To .....

Sl No.	Items	Examination Date	Marks Obtained (10)	Signature & Remarks
1	**Introduction of biochemistry :** Definition, Divisions & Scopes of Biochemistry, Importance in Medicine. Units of Measurement.			
2	**Solution** (Definitions, Types, Different Expressions - Units, True Solution, Standard Solutions), **Colloids & Crystalloids** (Definitions, Properties & Importance), Dialysis, **Isotope** (Definitions, Types, Importance in Medicine).			
3	Acid, Base, Salt, pH, pH scale, pK, Buffer, Henderson-Hasselbalch's Equation.			
4	**Chemistry of Carbohydrate :** Definition, Classification, Properties, Sources, Biomedical Importance, Physiolgically Important Carbohydrates.			
5	**Chemistry of Protein :** Definition, Classification, Properties, Sources, Structure, Biomedical Importance, Amino Acid, Peptides, Polypeptides.			
6	**Chemistry of Lipid :** Definition, Classification, Properties, Sources, Biomedical Importance, Fatty Acids & EFA, Steriods & Sterols, Eicosanoids, Lipoproteins & Phospholipids.			
7	**Enzyme** (Definition, Classification, Properties), Coenzyme, Cofactors, Isoenzyme (Definition & their clinical importance).			
8	**Integrated Learning Contents :** Chemical Composition of Cell (ICF) & Biological Membrane, Membrane Transport, Osmosis, Diffusion.			

Records of Card Final Examination

Examination	Date	Written			Oral (100/50)	Total (200/100)	Remarks
		SAQ (80/40)	MCQ (20/10)	Total (100/50)			
Regular	W: O:						
Supplementary							

Date:.....

Signature of the Batch Tutor: .....

Card - II

Food, Nutrition, Vitamins & Minerals

Name of the student :.....

Roll No :..... Batch : .....Session :.....

Period of Placement : From ..... To .....

Sl No.	Items	Examination Date	Marks Obtained (10)	Signature & Remarks
1	**Nutrition, Nutrients -** Essential Nutrients, Macro & Micronutrients, Food, Proximate Principles of Food, Diet & Balanced Diet, Basic Concepts of MR, BMR, DRI, RDA, SDA. BMI, Calculation of daily energy requirement & formulation of a diet chart.			
2	Sources, Requirement & Nuritional values of carbohydrate, dietary fiber, protein (with EAA) & fat (with PUFA), Glycemic Index (GI).			
3	**Vitamin-** Definition, classification, properties of fat soluble vitamins, Vitamin A & Vitamin E sources, Chemistry, active forms, RDA, function & deficiency disorders.			
4	**Fat Soluble Vitamin-** Vitamin D & Vitamin K (sources, Chemistry, Active forms, RDA, Function & deficiency disorders).			
5	**Water Soluble Vitamin-** Properties of water soluble vitamins, Vitamin B complex - (EXCEPT Vit B12 & Folic Acid) sources, chemistry active forms, RDA, function & deficiency disorders.			
6	**Water Soluble Vitamins-** Vit B12 & Folic Acid, Vitamin C (sources, chemistry, active forms, RDA, function & deficiency disorders).			
7	**Minerals-** Classification with definition, Trace Elements - sources, RDA, function & deficiency disorders of Fe, I_2, Zn, Cu, F, Se & Co.			

Card - II

Sl No.	Items	Examination Date	Marks Obtained (10)	Signature & Remarks
8	**Importance of macrominerals** - specially Na, K, Ca & Mg,			
9	Common nutritional disorders prevalent in Banglaeesh			

Records of Card Final Examination

Examination	Date	Written			Oral (100/50)	Total (200/100)	Remarks
		SAQ (80/40)	MCQ (20/10)	Total (100/50)			
Regular	W: O:						
Supplementary							

Date:.....

Signature of the Batch Tutor: .....

Card No. III

Digestion, Absorption, Bioenergetics & Metabolism

Name of the student :.....

Roll No :..... Batch : .....Session :.....

Period of Placement : From ..... To .....

Sl No.	Items	Examination Date	Marks Obtained (10)	Signature & Remarks
1	Basic Concept of Digestion & Absorption- Definition, Basic Mechanism, **Digestive Juices -** Definition, Types, Composition & Function of Saliva, Gastric Juice And Succus Intericus,			
2	**Digestive Juices** (Continued) - Composition & Function of Pancreatic Juice and Bile, Gastrointestinal hormones.			
3	**Digestion & absorption of Carbohydrate :** Common dietary Carbohydrates & their sources, Mechanism of Digestion, End Products of Carbohydrate Digestion & their Absorption.			
4	**Digestion & absorption of Protein :** Common dietary Protein & their sources, Mechanism of Digestion, End Products of Protein Digestion & their Absorption.			
5	**Digestion & absorption of Lipids :** Common dietary Lipids & their sources, Mechanism of Digestion, End Products of Lipid Digestion & their Absorption.			
6	**Metabolism:**Introduction (definition, basic pathways), Basic Idea on Bioenergetics, High & Low Energy Compounds, Biological Oxidation, Respiratory Chain.			
7	**Carbohydrate Metabolism :** Intermediary Metabolic Pathways, Glycolysis, Sources & Fates of Pyruvate, TCA cycle, Sources & Fates of Acetyl CoA.			
8	**Carbohydrate Metabolism** (Continued)- HMP Shunt, Gluconeogenesis, Cori cycle.			
9	**Carbohydrate Metabolism** (Continued) - Glycogenesis, Glycogenolysis, Hormonal Regulation of Blood Glucose Level.			
10	**Lipid Metabolism :** Lipogenesis, Lipolysis, β - Oxidation, Sources & Fates of Acetyl CoA , Ketogenesis, Fate of Ketone Bodies, Ketoacidosis; *Diabetic Ketoacidosis (Pathophysiology, Feature & Consequences).			

Sl No.	Items	Examination Date	Marks Obtained (10)	Signature & Remarks
11	**Lipid Metabolism** (Continued) - Cholesterol Synthesis and Excretion, Lipoproteins Metabolism.			
12	**Protein Metabolism :** Protein Turnover, Amino Acid Pool, Transamination, Deamination, Sources & Fates of Ammonia, Urea Cycle, Nitrogen Balance.			
13	**Integrated Metabolism :** Interlinks of Different Metabolic Pathways, Inborn Errors of Metabolism; Glycogen Storage Disease.			
14	**Integrated Learning Contents :** Role of Liver in Metabolism.			

Records of Card Final Examination

Examination	Date	Written			Oral (100/50)	Total (200/100)	Remarks
		SAQ (80/40)	MCQ (20/10)	Total (100/50)			
Regular	W: O:						
Supplementary							

Date:.....

Signature of the Batch Tutor: .....

Card No. IV

Renal Biochemistry, Body Fluid, Electrolytes & Acid-Base Balance

Name of the student :.....

Roll No :..... Batch : .....Session :.....

Period of Placement : From ..... To .....

Sl No.	Items	Examination Date	Marks Obtained (10)	Signature & Remarks
1	**Introduction to Body fluid:** Body fluid compartment, their composition & measurements, Daily Water Turnover, Normal Water Balance, role of kidney on its regulation.			
2	**Volume disorder:** Basic concept, classification, common causes & their correction.			
3	**Major electrolytes :** Importance of major electrolytes (Na+, K+, Cl - & HCO_3^-) & their homeostasis, common causes of abnormal Na+ & K+ level, Homeostasis of Ca^{++} & PO_4^{-3}).			
4	**Acid base balance :** Basic chemistry of acid base, H+ homeostasis & role of kidney in acid base balance (acidification of urine).			
5	**Acid base disorders :** Basic concept, classification & common causes, parameters of acid base disorders, primary defect, compensation & correction of each.			
6	**Renal Biochemistry :** Important kidney functions, GFR, plasma load, tubular load, transport maximum, plasma clearance, osmolar clearence, free water clearence, renal threshold.			
7	**Integrated Renal Biochemistry :** Role of Kidneys in water, electrolyte & acid-base balance, Obligatory Urine Volume, Normal & abnormal constituents of urine, common methods of identification of major abnormal constituents, Importance of common renal function tests.			

Records of Card Final Examination

Examination	Date	Written			Oral (100/50)	Total (200/100)	Remarks
		SAQ (80/40)	MCQ (20/10)	Total (100/50)			
Regular	W: O:						
Supplementary							

Date:.....

Signature of the Batch Tutor: .....

Card No. V (a)

Clinical Biochemistry

Name of the student :.....

Roll No :..... Batch : .....Session :.....

Period of Placement : From ..... To .....

Sl No.	Items	Examination Date	Marks Obtained (10)	Signature & Remarks
1	Introduction of clinical biochemistry, normal biochemical values in conventional & SI units, concept of SI unit, Specimen collection & preservation, Laboratory hazards, Quality Control.			
2	**Photometry** (Basic Principle, Beer's law, Lambert's law), Colorimeter & Spectrophotometer, **Others:** Electrophoresis, Chromatography (Definition).			
3	**Organ function tests :** Liver Function Test (LFT), Renal Function Test (RFT) , Thyroid Function Test (TFT).			
4	**Diabetes Mellitus :** Definition, Classification, Biochemical Background of DM, Complications (Diabetic Ketoacidosis), Laboratory Diagnosis, OGTT.			
5	**Clinical enzymology :** Isoenzyme, Enzymes Related to Liver Diseases & Myocardial Disease (Cardiac Markers).			
6	**Lipid Profile** & Dyslipoproteinemias.			
7	**Bilirubin Metabolism & Jaundice** (Definition, Classification, Common Causes, Differential Diagnosis)			

Card No. V (b)

Clinical Endocrinology

Sl No.	Items	Examination Date	Marks Obtained (10)	Signature & Remarks
1	Basic concept of cellular communications & signal transduction (Types, Chemical Messengers, Mechanism of Action of 2nd Messengers), Cytokines.			
2	**Hormones :** Definition, Classification, Mechanism of Action, Regulation.			
3	**Thyroid Hormones & Disorders :** Chemistry, Mechanism of Action, Function & Abnormalities (hyper- & hypothyroidism).			
4	**Parathyroid Hormones & Calcitonin :** Chemistry, Mechanism of Action, Function—Ca+ homeostasis & related disorders.			
5	**Pancreatic Hormones & disorders :** Chemistry, Mechanism of Action, Function—* Structure of Insulin, DM, Causes & Consequences of Hypo & Hyperglycemia.			
6	**Integrated Learning Contents :** Hypo & Hyperpituitarism, Hypo & Hyperadrenalism, Neurotransmitters.			

Records of Card Final Examination

Examination	Date	Written			Oral (100/50)	Total (200/100)	Remarks
		SAQ (80/40)	MCQ (20/10)	Total (100/50)			
Regular	W: O:						
Supplementary							

Date:.....

Signature of the Batch Tutor: .....

Card No. VI

Fundamentals of Molecular Biology & Genetics

Name of the student :.....

Roll No :..... Batch : .....Session :.....

Period of Placement : From ..... To .....

Sl No.	Items	Examination Date	Marks Obtained (10)	Signature & Remarks
1	Basic concept of genetics, Nucleosides & Nucleotide, Nucleic Acids- RNA, DNA, Chromosome, structural organization of DNA into Chromosome.			
2	Central Dogma, Gene, Genome, Allele, Trait, Genetic Code, Codon.			
3	**Replication :** Definition, Criteria, Requirements, Steps, DNA Repair, Cell Cycle.			
4	**Transcription :** Definition, Criteria, Requirements, Steps, Post Transcriptional Modifications.			
5	**Translation :** Definition, Criteria, Requirements, Steps, Post Translational Modifications.			
6	**Mutation :** Definition, Classification & Effects, Cytogenetic Disorders.			
7	Recombinant DNA Technology, DNA cloning, PCR, Polymorphism (RFLP), DNA finger print.			
8	**Medical Biotechnology :** Basic Concept, Application (Biomedical Aspects).			

Records of Card Final Examination

Examination	Date	Written			Oral (100/50)	Total (200/100)	Remarks
		SAQ (80/40)	MCQ (20/10)	Total (100/50)			
Regular	W: O:						
Supplementary							

Date:.....

Signature of the Batch Tutor: .....