

## Lesson Plan

**Name of the Faculty** : guest faculty

**Discipline** : MLT

**Year** : 1<sup>st</sup>

**Subject** : BIOCHEMISTRY

**Lesson Plan Duration** : July-2018 to May-2019

**Work Load (Lecture/Practical) per week (in hours):** Lecture= 03, Practical=2

Week	Theory		Practical	
	Lecture Day	Topic (including assignment / test)	Practical Day	Topic
1	1	Introduction to biochemistry	1	General introduction and safety measures in clinical biochemistry laboratory
	2	Definition and importance of biochemistry		
	3	SI units and their Uses		
2	4	Volumetric apparatus and their calibration	2	Cleaning of Glassware
	5	Introduction about glassware and plasticware		
	6	Cleaning and care of laboratory glassware		
3	7	Cleaning and care of laboratory plasticware	3	Handling and maintenance of Balance
	8	Introduction about cleaning agents		
	9	Different cleaning agents		
4	10	Methods of cleaning	4	Handling and maintenance of Centrifuge
	11	Methods of storage		
	12	Assignment		
5	13	Class Test 1	5	Handling and maintenance of Colorimeter
	14	Introduction about various instruments used in clinical biochemistry laboratory		
	15	Introduction about principle and working of analytical balance		
6	16	Electrical/ Electronic balance	6	Handling and maintenance of Glucometer
	17	Handling and care of balance		

	18	Introduction about centrifuge		
7	19	Principle and working of centrifuge	7	Handling and maintenance of Ion Selective Electrode
	20	Handling and care of centrifuge		
	21	Introduction about colorimeter		
8	22	Principle and working of colorimeter	8	Handling and maintenance of Distillation Plant
	23	Handling and care of colorimeter		
	24	Introduction about spectrophotometer		
9	25	Principle and working of spectrophotometer	9	Collection of capillary blood
	26	Handling and care of spectrophotometer		
	27	Introduction about Ion-Selective Electrodes		
10	28	Principle and working of Ion-Selective Electrodes	10	Collection of Venous blood
	29	Concept of flame photometer		
	30	Introduction about glucometer		
11	31	Principle and working of glucometer	11	Separation of Serum
	32	Handling and care of glucometer		
	33	Principle, working and care of Distillation Plant		
12	34	Principle, working and care of deionizer Apparatus	12	Separation of Plasma
	35	Assignment-2		
	36	Class Test 2		
13	37	Introduction about Blood and its fraction	13	Preparation of Protein Free Filtrate (PFF)
	38	Separation of Serum		
	39	Separation of Plasma		
14	40	Different Protein Precipitating reagents	14	Practical Revision
	41	Preparation of protein free filtrate (PFF)		

	42	Collection and preservation of Blood		
15	43	Collection and preservation of Urine	15	Practical Test
	44	Collection and preservation of Stool and other body fluids		
	45	Assignment & Class Test - 3		
16	1	Metabolism of Glucose	16	Estimation of blood glucose/sugar (Folin-Wu method)
	2	Principle and methods of estimation		
	3	Principle and methods of estimation		
17	4	Reference values	17	Estimation of blood glucose/sugar (O-toluidine method)
	5	Renal threshold		
	6	Importance and Performance of ST/GTT		
18	7	Clinical importance of blood sugar, ST/GTT	18	Estimation of blood glucose/sugar (enzymatic method)
	8	Revision		
	9	Assignment		
19	10	Test	19	Performance of ST/GTT
	11	Formation and excretion of urea		
	12	Formation and excretion of urea		
20	13	Principle and procedures of different methods of urea estimation	20	Serum urea estimation
	14	Principle and procedures of different methods of urea estimation		
	15	Reference values		
21	16	Clinical Importance	21	Serum creatinine estimation
	17	Revision		
	18	Introduction, principle and procedure of various estimation methods of ceatinine estimation		
22	19	Introduction, principle and procedure of various estimation methods of ceatinine estimation	22	Serum uric acid estimation
	20	Reference values and Clinical importance		
	21	Revision		
23	22	Assignment and test of 2nd and 3rd unit	23	Plasma and serum protein estimation
	23	Serum proteins Introduction		
	24	Different methods of estimation including principles and procedures of serum protein		
24	25	Different methods of estimation including principles and procedures of serum protein	24	Estimation of electrolyte levels of K <sup>+</sup> by colorimetric method
	26	Reference values and Clinical importance		
	27	Revision		
25	28	Assignment	25	Estimation of electrolyte levels of Cl <sup>-</sup> by
	29	Test		

	30	Introduction of Na, K, and Cl		colorimetric method
26	31	principles and procedures of estimation of Na <sup>+</sup>	26	Revision of Practicals
	32	principles and procedures of estimation of K <sup>+</sup>		
	33	principles and procedures of estimation of, Cl <sup>-</sup> .		
27	34	Reference values and Clinical importance	27	Revision of Practicals
	35	Reference values and Clinical importance		
	36	Revision		
28	37	Assignment and Test	28	Revision of Practicals
	38	Introduction uric acid,		
	39	principles and procedures of various estimation methods of uric acid estimation		
29	40	Reference values Clinical Importance	29	Revision of Practicals
	41	Revision		
	42	Quality Assurance in Biochemistry		
30	43	Internal quality assurance	30	Revision of Practicals
	44	External quality assurance		
	45	Assignment And Test		