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Competency Table

Topic: Biochemistry Laboratory Tests		*Number of competencies (22)*		*Number of procedures that require certification (05)*			*Chapter/Page no.*	
Number	*Competency The student should be able to*	*Core (Y/N)*	*Suggested teaching-learning method*	*Suggested assessment method*	*No. Required to certify*	*Integration: Vertical/ Horizontal*	*Chapter*	*Page no.*
BI11.1	Describe commonly used laboratory apparatus and equipments, good safe laboratory practice and waste disposal.	Y	Lecture, small group discussion	Written/Viva voce			2	4
BI11.2	Describe the preparation of buffers and estimation of pH.	Y	Lecture, small group discussion	Written/Viva voce			3	13
BI11.3	Describe the chemical components of normal urine.	Y	Lecture, small group discussion	Written/Viva voce			5	21
BI11.4	Perform urine analysis to estimate and determine normal and abnormal constituents.	Y	DOAP session	Skill assessment	1	General medicine/ Physiology	6	28
BI11.5	Describe the use of paper chromatography.	Y	Lecture, small group discussion	Written/Viva voce		General medicine	25	105
BI11.6	Describe the principles of colorimetry.	Y	Lecture, small group discussion	Written/Viva voce			9	45
BI11.7	Demonstrate the estimation of serum creatinine and creatinine clearance.	Y	Practical	Skills assessment	1		13	62

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Number	*Competency The student should be able to*	*Core (Y/N)*	*Suggested teaching-learning method*	*Suggested assessment method*	*No. Required to certify*	*Integration: Vertical/ Horizontal*	*Chapter*	*Page No.*
BI11.8	Demonstrate estimation of serum proteins, albumin and AG ratio.	Y	Practical	Skills assessment	1		15	73
BI11.9	Demonstrate estimation of serum cholesterol and HDL cholesterol.	Y	Practical	Skills assessment			16	77
BI11.10	Demonstrate the estimation of triglycerides.	Y	Practical	Skills assessment			17	79
BI11.11	Demonstrate estimation of calcium and phosphorous.	Y	Practical	Skills assessment			18	82
BI11.12	Demonstrate the estimation of serum bilirubin.	Y	Practical	Skills assessment			19	87
BI11.13	Demonstrate the estimation of SGOT/SGPT.	Y	Practical	Skills assessment			20	90
BI11.14	Demonstrate the estimation of alkaline phosphatase.	Y	Practical	Skills assessment			21	92
BI11.15	Describe and discuss the composition CSF.	Y	Lecture, small group discussion	Written/Viva voce			8	41
BI11.16	Observe use of commonly used equipments/ techniques in biochemistry including: ▪ pH meter ▪ Paper chromatography of amino acid ▪ Protein electrophoresis ▪ TLC, PAGE ▪ Electrolyte analysis by ISE ▪ Autoanalyzer ▪ DNA isolation from blood/tissue	Y	Demonstration	Skill assessment		General medicine/ Pathology	4 24–33	16 103–128

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Number	*Competency The student should be able to*	*Core (Y/N)*	*Suggested teaching-learning method*	*Suggested assessment method*	*No. Required to certify*	*Integration: Vertical/ Horizontal*	*Chapter*	*Page No.*
BI11.17	Explain the basis and rationale of biochemical tests done in the following conditions: ▪ Diabetes mellitus ▪ Dyslipidemia ▪ Myocardial infarction ▪ Renal failure, gout ▪ Proteinuria ▪ Nephrotic syndrome ▪ Edema ▪ Jaundice ▪ Liver diseases, pancreatitis ▪ Acid-base disorders ▪ Thyroid disorders.	Y	Lecture, small group discussion	Written/Viva voce			11 14 22 23 35–40 43	51 68 94 101 137–152 165
BI11.18	Discuss the principles of Spectrophotometry.	Y	Lecture, small group discussion	Written/Viva voce			10	49
BI11.19	Outline the basic principles involved in the functioning of instruments commonly used in biochemistry laboratory and their applications.	Y	Lecture, small group discussion	Written/Viva voce			12 23–32	58 101–125
BI11.20	Identify abnormal constituents in urine, interpret the findings and correlate these with pathological states.	Y	DOAP sessions	Skill assessment	1		6 7	28 34
BI11.21	Demonstrate estimation of glucose, creatinine, urea and total protein in serum.	Y	DOAP sessions	Skill assessment	1		11–15	51–73

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Number	*Competency The student should be able to*	*Core (Y/N)*	*Suggested teaching-learning method*	*Suggested assessment method*	*No. Required to certify*	*Integration: Vertical/ Horizontal*	*Chapter*	*Page No.*
BI11.22	Calculate Albumin: Globulin (AG) ratio and creatinine clearance.	Y	Lecture, small group discussion	Written/Viva voce		General medicine	13 15	62 73
BI11.23	Calculate energy content of different food items, identify food items with high and low glycemic index and explain the importance of these in the diet.	Y	Lecture, small group discussion	Written/Viva voce		General medicine	41	157
BI11.24	Enumerate advantages and/ or disadvantages of use of unsaturated, saturated and trans fats in food.	Y	Lecture, small group discussion	Written/Viva voce		General medicine	42	160
PY4.8	Describe and discuss gastric function tests, pancreatic exocrine tests and liver function tests.	Y	Lecture, small group discussion	Written/Viva voce			34–36	133–144
PY7.8	Describe and discuss renal function tests.	Y	Lecture, small group discussion	Written/Viva voce			38	145
PY8.4	Describe function tests: Thyroid gland, adrenal cortex, adrenal medulla and pancreas	Y	Lecture, small group discussion	Written/Viva voce			39 40	148 152

DOAP session—Demonstrate, Observe, Assess, Perform