

COURSE OUTLINE

T – Theory

Unit	Time (Hrs)	Learning Outcomes	Content	Teaching/ Learning Activities	Assessment Methods
I	8 (T)	Describe the metabolism of carbohydrates and its alterations	Carbohydrates <ul style="list-style-type: none"> • Digestion, absorption and metabolism of carbohydrates and related disorders • Regulation of blood glucose • Diabetes Mellitus – type 1 and type 2, symptoms, complications & management in brief • Investigations of Diabetes Mellitus <ul style="list-style-type: none"> ○ OGTT – Indications, Procedure, Interpretation and types of GTT curve ○ Mini GTT, extended GTT, GCT, IV GTT ○ HbA1c (Only definition) □ Hypoglycemia – Definition & causes 	<ul style="list-style-type: none"> • Lecture cum Discussion • Explain using charts and slides • Demonstration of laboratory tests 	<ul style="list-style-type: none"> • Essay • Short answer • Very short answer
II	8 (T)	Explain the metabolism of lipids and its alterations	Lipids <ul style="list-style-type: none"> • Fatty acids – Definition, classification • Definition & Clinical significance of MUFA & PUFA, Essential fatty acids, Trans fatty acids • Digestion, absorption & metabolism of lipids & related disorders • Compounds formed from cholesterol • Ketone bodies (name, types & significance only) • Lipoproteins – types & functions (metabolism not required) • Lipid profile • Atherosclerosis (in brief) 	<ul style="list-style-type: none"> • Lecture cum Discussion • Explain using charts and slides • Demonstration of laboratory tests 	<ul style="list-style-type: none"> • Essay • Short answer • Very short answer
III	9 (T)	Explain the metabolism of amino acids and proteins Identify alterations in disease conditions	Proteins <ul style="list-style-type: none"> • Classification of amino acids based on nutrition, metabolic rate with examples • Digestion, absorption & metabolism of protein & related disorders • Biologically important compounds synthesized from various amino acids (only names) • In born errors of amino acid metabolism – only aromatic amino acids (in brief) • Plasma protein – types, function & normal values • Causes of proteinuria, hypoproteinemia, hyper-gamma globinemia • Principle of electrophoresis, normal & abnormal electrophoretic patterns (in 	<ul style="list-style-type: none"> • Lecture cum Discussion • Explain using charts, models and slides 	<ul style="list-style-type: none"> • Essay • Short answer • Very short answer
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			brief)		
IV	4 (T)	Explain clinical enzymology in various disease conditions	Clinical Enzymology <ul style="list-style-type: none"> • Isoenzymes – Definition & properties • Enzymes of diagnostic importance in <ul style="list-style-type: none"> ○ Liver Diseases – ALT, AST, ALP, GGT ○ Myocardial infarction – CK, cardiac troponins, AST, LDH ○ Muscle diseases – CK, Aldolase ○ Bone diseases – ALP ○ Prostate cancer – PSA, ACP 	<ul style="list-style-type: none"> • Lecture cum Discussion • Explain using charts and slides 	<ul style="list-style-type: none"> • Essay • Short answer • Very short answer
V	3 (T)	Explain acid base balance, imbalance and its clinical significance	Acid base maintenance <ul style="list-style-type: none"> • pH – definition, normal value • Regulation of blood pH – blood buffer, respiratory & renal • ABG – normal values • Acid base disorders – types, definition & causes 	<ul style="list-style-type: none"> • Lecture cum Discussion • Explain using charts and slides 	<ul style="list-style-type: none"> • Short answer • Very short answer
VI	2 (T)	Describe the metabolism of hemoglobin and its clinical significance	Heme catabolism <ul style="list-style-type: none"> • Heme degradation pathway • Jaundice – type, causes, urine & blood investigations (van den berg test) 	<ul style="list-style-type: none"> • Lecture cum Discussion • Explain using charts and slides 	<ul style="list-style-type: none"> • Short answer • Very short answer
VII	3 (T)	Explain different function tests and interpret the findings	Organ function tests (biochemical parameters & normal values only) <ul style="list-style-type: none"> • Renal • Liver • Thyroid 	<ul style="list-style-type: none"> • Lecture cum Discussion • Visit to Lab • Explain using charts and slides 	<ul style="list-style-type: none"> • Short answer • Very short answer
VIII	3 (T)	Illustrate the immunochemistry	Immunochemistry <ul style="list-style-type: none"> • Structure & functions of immunoglobulin • Investigations & interpretation – ELISA 	<ul style="list-style-type: none"> • Lecture cum Discussion • Explain using charts and slides • Demonstration of laboratory tests 	<ul style="list-style-type: none"> • Short answer • Very short answer