**Study Plan**

**Biochemistry I**

***I year, II semester***

*Stomatology*

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| --- | --- | --- |
|  |  | **Material** |
| 1 |  | Metabolic Fuels and Dietary Components *(handout)* |
| 2 |  | Water, Acids, Bases, and Buffers *(handout)* |
| 3 |  | Amino Acids in Proteins; Classification of amino acids, |
| 4 |  | Fibrous proteins. |
| 5 |  | Structure and function of proteins; Hb and Mb |
| 6 |  | Enzymes as Catalysts; classification, mechanism of action; active centre. |
| 7 |  | Coenzymes ,classes of coenzymes. |
| 8 |  | Kinetics of enzymatic reaction; Km; Michaelis-Menten equation; factors acting on the reaction velocity . |
| 9 |  | **Colloquium *I*** |
| 10 |  | Lipid and water-soluble vitamins. |
| 11 |  | Cell Signaling by Chemical Messengers: receptors  General principles and pathways of signal transduction. |
| 12 |  | Cellular Bioenergetics: ATP and O2. Sources of acetyl-CoA and metabolism; pyruvatedehydrogenase complex; |
| 13 |  | TCA cycle .Reactions of TCA cycle; energetic effect of TCA cycle. |
| 14 |  | Oxidative Phosphorylation and Mitochondrial Function |
| 15 |  | **Colloquium *II*** |

**Assessment Points for medical Students**

**(II course, I semester)**

Attendance – 3

Academic activity – 30

Colloquiums– 27

**Sum of intermediate assessments - 60 points**

**Final Exam – 40 points**

**Total – 100**

**Study Plan**

**Biochemistry II**

***II year, I semester***

*Stomatology*

|  |  |  |
| --- | --- | --- |
|  |  | **Material** |
| 1 |  | Carbohydrates digestion, absorption, transport |
| 2 |  | Synthesis of ATP from glucose. Glycolysis. Functions of glycolysis.. |
| 3 |  | Glycogen synthesis and degradation. Regulation of glycogen metabolism. |
| 4 |  | Gluconeogenesis. |
| 5 |  | **Colloquium I** |
| 6 |  | Digestion, absorption and transport of lipids during feeding and starvation states. Oxidation of fatty acids |
| 7 |  | Metabolism of ketone bodies. Ketogenesis and utilization of ketone bodies. Triacylglycerol formation and mobilization. |
| 8 |  | Cholesterol metabolism, Transport of cholesterol with lipoproteins. |
| 9 |  | Integration of lipid and carbohydrate metabolism. |
| 10 |  | Digestion of proteins and absorption of amino acids. Pathways of amino acid conversion: transamination, deamination, |
| 11 |  | Detoxication of amonia. Urea cycle |
| 12 |  | Extracellular proteins. Collagen biosynthesis, defects in collagen synthesis. |
| 13 |  | Principles of nutrition, starve-feed cycle |
| 14 |  | **Colloquium II** |
| 15 |  | **Clinical case discussion** |

**Assessment Points for medical Students**

**(II course, II semester)**

Attendance – 3

Academic activity –30

Colloquiums – 22

Clinical case study - 5

**Sum of intermediate assessments - 60 points**

**Final Exam – 40 points**

**Totally – 100**