Avinashilingam Institute for Home Science and Higher Education for Women
(Deemed to be University under Category 'A^{+}' by MHRD, Estd. u/s 3 of UGC Act 1956)
Re-accredited with A^{++} Grade by NAAC. Recognised by UGC Under Section 12B
Coimbatore - 641 043, Tamil Nadu, India
Continuous Internal Assessment Test II – April, 2025
Semester II

Class: I PG **Time: 2 Hrs**
Major: Biochemistry **Max. Marks: 60**

23MBCC10-Diagnostic Biochemistry

Course Outcomes:
After completing the course, the students will be able to
CO1. Obtain basic knowledge about specimen collections, pathological variations of water, electrolytes
CO2. Understand the, patterns of inherited disorders and disorders of hemoglobin metabolism
CO3. Correlate the tests used for renal and gastric functions and their interpretations
CO4. Impart the diagnostic tests for liver function and lipoprotein metabolic disorders
CO5. Evaluate the alterations in blood glucose regulation and enzymes of clinical importance

Part A - Answer all questions **(6 x 1 = 6)**

1. Which of the following is the best marker for measuring glomerular filtration rate (GFR)? (CO3; K2)
   a) Urea b) Creatinine c) Inulin d) Uric acid
2. The presence of steatorrhea is a key diagnostic feature of: (CO3; K2)
   a) Peptic ulcer disease b) Malabsorption syndrome
   c) Zollinger-Ellison syndrome d) Achlorhydria
3. The enzyme, that is most specific for detecting hepatocellular damage is (CO4; K2)
   a) Alkaline phosphatase (ALP) b) Alanine aminotransferase (ALT)
   c) Gamma-glutamyl transferase (GGT) d) Creatine kinase (CK)
4. Which of the following is a marker of liver function based on bile pigment metabolism? (CO4; K2)
   a) Serum albumin b) Alanine aminotransferase (ALT)
   c) Total and direct bilirubin d) Alkaline phosphatase (ALP)
5. Which one of the following isoenzymes is found in the liver and bone? (CO5; K2)
   a) Acid phosphatase (ACP) b) Alkaline phosphatase (ALP)
   c) Creatine kinase-MB (CK-MB) d) Lactate dehydrogenase-1 (LDH-1)
6. Acetylcholinesterase is clinically important in the diagnosis of: (CO5; K2)
   a) Alzheimer's disease b) Myocardial infarction
   c) Liver failure d) Muscular dystrophy

Part B - Answer the following **(3 x 6 = 18)**
(Answer should not exceed 400 words)

7 (a)Explain the pathophysiology, clinical manifestations, and diagnosis of nephritis and nephrosis. (CO3; K3)

(Or)

7 (b) Give an account of pancreatic function tests and molecular diagnosis methods(CO3; K3)

8 (a) Explain liver function tests based on bile pigment metabolism and detoxification(CO4; K2)

(Or)

8 (b) Describe the pathophysiology, biochemical changes and diagnostic methods of diabetes mellitus. (CO4; K3)

9 (a)Give the clinical importance of creatine kinase isoenzymes and their role in muscle and cardiac diseases (CO5; K3)

(Or)

9 (b) Describe the diagnostic role of phosphatases, including alkaline phosphatase and acid phosphatase in various diseases (CO5; K3)

Part C - Answer the following **(3 x 12 = 36)**

(Answer should not exceed 800 words)

10(a) Discuss the different tests used to assess glomerular filtration rate (GFR), renal plasma flow (RPF) and tubular functions (CO3; K3)

(Or)

10 (b) Explain the methodology and significance of gastric function tests, including examination of resting content and fractional gastric analysis (CO3; K2)

11 (a)Elaborate on the biochemical basis, classification and diagnostic approaches for different types of jaundice (CO4; K3)

(Or)

11 (b)Give an account of the causes, biochemical changes and diagnostic markers of coronary heart disease and hypertension (CO4; K3)

12 (a)Discuss the clinical significance of isoenzymes in disease diagnosis (CO5; K4)

(Or)

12 (b) Explain the clinical significance of 5'-nucleotidase, acetylcholinesterase, transaminases, and gamma-glutamyl transferase (GGT) in disease diagnosis. (CO5; K3)

Staff Incharge: Dr. Anitha Subash& Dr. Poongodi. T **No. of copies: 12**