

**Q.P Code**

**Reg. No.**

**PG Degree Regular/Supplementary Examinations in Biochemistry (M.D)**

**Paper IV – Basic principle and practices of clinical biochemistry ,biochemical analytes, assessment of organ system functions and recent advances in Biochemistry**

**Time : Three Hours**

**Maximum : 100 Marks**

**Essay:**

**(20)**

1. Discuss the pathogenesis, risk factors, preventive strategies, and treatment of atherosclerosis

**Short Essays**

**(8 x10 = 80)**

2. Discuss the roles of the gastrointestinal tract in the digestion and absorption of carbohydrates
3. Discuss the role of Artificial Intelligence(AI) in Clinical Biochemistry Laboratory
4. Evaluate the diagnostic sensitivity, specificity, accuracy, and predictive values of laboratory tests to assess their clinical utility
5. Biochemical markers of bone turn over
6. Enumerate the peptide hormones and discuss their mechanism of action
7. Discuss the laboratory tests used to assess glomerular function
8. A 30-year-old woman presents to the medical outpatient department with frequent diarrhoea, numbness of fingers and toes, and lancinating pain. The symptoms have progressively worsened over the past three months. She is a strict vegetarian and does not consume milk or milk products. Examination: General: Anaemic, tongue is beefy red ; Neurological: Numbness in all four extremities, decreased vibration sense ; Laboratory: Peripheral blood smear shows megaloblastic anaemia
  - a) Identify the vitamin deficiency in this patient
  - b) Discuss the Biochemical functions of this Vitamin
  - c) Discuss the diagnostic tests to assess its deficiency?
9. A 45-year-old lady visited Obstetrics and Gynaecology outpatient department with urine pregnancy test positive.
  - a. List and briefly describe the maternal serum screening tests performed during pregnancy
  - b. Write a note on non-invasive genetic tests performed on maternal serum to detect and rule out foetal anomalies.