

# National Board of Examinations

**Question Paper Name :** DNB Biochemistry Paper1

**Is this Group for Examiner? :** No

**Enable Mark as Answered Mark for Review and Clear Response :** Yes

**Question Number : 1 Question Type : SUBJECTIVE**

- a) Define 'Renal clearance'. Mention the unit of renal clearance. [2]
- b) Why is creatinine clearance considered to be a better indicator for assessing renal dysfunction during initial stages of renal failure than serum creatinine level? [3]
- c) List and briefly describe for the common methods to assess the Renal clearance in clinical practice. [5]

**Question Number : 2 Question Type : SUBJECTIVE**

- a) Write the biochemical basis of regulation of the bone mineralization process by osteoclast and osteoblast cells. [4]
- b) List the various markers of bone turnover. Write the indications, laboratory methods and interpretations of assay of any one osteolysis marker. [6]

**Question Number : 3 Question Type : SUBJECTIVE**

- a) List the various inborn errors of tyrosine metabolism. Discuss about their enzyme deficiency, inheritance pattern and clinical manifestations. [6]
- b) Write briefly about the laboratory diagnosis of the various inborn errors of tyrosine metabolism. [4]

**Question Number : 4 Question Type : SUBJECTIVE**

- a) Write the objectives of using six sigma metrics in clinical laboratory. [5]
- b) Explain the different strategies and tools used to carry out six sigma analysis. [5]

**Question Number : 5 Question Type : SUBJECTIVE**

- a) Describe the laboratory approach for the diagnosis of the probable causes of primary infertility in a woman. [7]
- b) Explain the importance of sex hormone binding globulins in the etiopathogenesis of various reproductive disorders in both the genders. [3]

**Question Number : 6 Question Type : SUBJECTIVE**

- a) Write about sample size calculation for case control studies. [5]
- b) Write the steps of Linear regression analysis and how is linear regression analysis data presented. [5]

**Question Number : 7 Question Type : SUBJECTIVE**

- a) How is impact factor of a journal and H-Index of a researcher calculated? [5]
- b) Outline the steps of Meta-analysis and list the statistical tools used in it. [5]

**Question Number : 8 Question Type : SUBJECTIVE**

You have been provided with goat liver tissue, instructed to isolate alkaline phosphatase (ALP) from it and determine its catalytic efficiency. Write the method(s) that you will adopt for the isolation, purification and catalytic efficiency determination of this enzyme. [10]

**Question Number : 9 Question Type : SUBJECTIVE**

Explain in detail about the external quality control of a clinical biochemistry laboratory. [10]

**Question Number : 10 Question Type : SUBJECTIVE**

List **three** covalent modifications that occur in enzymes and write the biochemical reaction and amino acids involved in these modifications. Discuss the role of covalent modification in the regulation of enzyme activity with one suitable example for each type of covalent modification. [4+6]