National Board of Examinations

Question Paper Name :	DNB Biochemistry Paper4
Is this Group for Examiner? :	No
Enable Mark as Answered Mark for Review and Clear Response :	Yes

Question Number : 1 Question Type : SUBJECTIVE

a) Enumerate the different mutation detection techniques. [5]

b) Discuss the mechanism of imatinib resistance of leukemic cells and its laboratory detection method. [5]

Question Number : 2 Question Type : SUBJECTIVE

a) Define a recombinant DNA. How is it prepared in laboratory? How is it introduced in bacteria or eukaryotic cells for it expression. [2+3+2]

b) List **three** applications of recombinant technology. [3]

Question Number : 3 Question Type : SUBJECTIVE

a) Describe the principle of flow cytometry and its applications. [5]

b) Explain the role of high performance liquid chromatography (HPLC) in the diagnosis of hemoglobinopathies. [5]

Question Number : 4 Question Type : SUBJECTIVE

Write the role of bioinformatics in modern medicine. Mention about some bioinformatic tools used in interpretation of Next Gen Sequencing of DNA. [8+2]

Question Number : 5 Question Type : SUBJECTIVE

a) Discuss the role of the clinical biochemistry laboratory in the monitoring of patients with COVID-19 infection. [5]

b) Explain the mechanism of action of the various COVID vaccines approved for use in India. [5]

Question Number : 6 Question Type : SUBJECTIVE

Define therapeutic window of a drug. Comment on therapeutic window of the drugs that need therapeutic monitoring. Mention about the laboratory method for therapeutic monitoring of lithium, aminoglycosides and anticonvulsants. [2+2+6]

Question Number : 7 Question Type : SUBJECTIVE

a) ChiP assay. [5]

b) FISH. [5]

Question Number : 8 Question Type : SUBJECTIVE

a) Mention the broad steps of western blotting technique and its applications in experimental biochemistry. [6]

b) Describe the role of in-vitro cell culture techniques in experimental biology. [4]

Question Number : 9 Question Type : SUBJECTIVE

Mention the sources of cell free DNA (cfDNA) in plasma. How is it isolated from plasma and detected? Discuss applications and potential applications of cfDNA in diagnostics? [2+2+6]

Question Number : 10 Question Type : SUBJECTIVE

a) Write about the techniques and applications of non-invasive prenatal testing (NIPT). [5]

b) Write about recent development in receptor for temperature and touch. [5]