

MD practice test- March 2026

(Research methodology, biochemistry analytical techniques, advanced research techniques, medical teaching)

Time: 3 Hours

Dt. 23.03.2026

Maximum Marks: 100

1. Discuss in detail the principles, instrumentation, and applications of advanced analytical techniques in clinical biochemistry. [5 x 5= 25]
 - a) Mass spectrometry (LC-MS/MS)
 - b) High-performance liquid chromatography (HPLC)
 - c) Immunoassays (ELISA, CLIA)
 - d) Quality control and assurance
 - e) ISE for electrolytes
2. Explain the role of radioisotopes in biomedical research and clinical practice. Add a note on the acute and chronic complications of radiotherapy. [1 x10= 10]
3. Discuss elaborately about nanotechnology and microfabrication in modern medicine. [1 x10= 10]
4. Explain different types of study designs in research methodology with examples and their strengths and limitations. Explain how you proceeded in your dissertation topic. [1 x 15= 15]
5. Discuss basics of medical education technology, including: [1 x 15= 15]
 - a) Teaching-learning methods
 - b) Objective Structured Practical Examination (OSPE)
 - c) Assessment tools and feedback
6. Write short notes on- [5 x 5= 25]
 - a) Microteaching
 - b) Metabolomics
 - c) P-value in statistics
 - d) Protein sequencing
 - e) Water testing