

Q.P. CODE: M102A031**DR NTR UNIVERSITY OF HEALTH SCIENCES : VIJAYAWADA- 520008****MBBS DEGREE EXAMINATION: OCTOBER, 2024****FIRST M.B.B.S. EXAMINATION****BIOCHEMISTRY PAPER-II****(Theory Questions)****Time: 2 Hour 40 Minutes****Max Marks: 80****Note: Answer all questions.****Draw diagrams, representation wherever necessary.**

SECTION-II (THEORY QUESTIONS - 80 MARKS)**STRUCTURED ESSAY QUESTIONS:****2x15=30**

1. Write the sources, RDA, absorption, transport, biochemical functions and deficiency manifestations of calcium. Add a note on the regulation of plasma calcium levels.

2. A 35-year-old male attended the emergency department with complaints of nausea, vomiting, and headache for the past week and also he complained that for the last 15 days, he has been feeling very tired. His blood pH is 7.35 and HCO_3^- is 22 meq/l. (This section is incomplete in the image. It cuts off mid-sentence.)

What is the normal blood pH? Enlist various buffers of body fluids. Explain the role of plasma buffers and renal mechanisms in the maintenance of acid-base balance.

SHORT ANSWER QUESTIONS:**10x5=50**

3. Explain the transport mechanisms across the cell membrane.
4. A three-month-old baby was brought to the hospital with the complaint of the child's diaper becoming black.
 - a) What is your probable diagnosis?
 - b) What is the biochemical cause for the blackening of diapers?
 - c) Write about the metabolism of Tyrosine.
5. Define and describe different types of mutations.
6. Classify hormones based on their mechanism of action.
7. A 50-year-old alcoholic man came to the hospital with complaints of excruciating pain in his great toe. What is your diagnosis? Enumerate the primary and secondary causes of the disease. What is the drug of choice for this condition?
8. Functions of Plasma Proteins.
9. Immunoglobulins.
10. Carcinogens.
11. Lesch-Nyhan syndrome.
12. PCR and its applications.
