

KALOJI NARAYANA RAO UNIVERSITY OF HEALTH SCIENCES
WARANGAL, TELANGANA STATE – 506 002
MBBS FIRST YEAR SUPPLEMENTARY EXAMINATIONS: NOVEMBER,2025

BIOCHEMISTRY
PAPER – I

Time: 3 Hours

Max Marks: 100

Note: Answer all questions

Give Diagrammatic representation wherever necessary

Multiple Choice Questions:

10 X 1 = 10

1. Calcitriol acts synergistically with the following hormone on bone
 - a) Calcitonin
 - b) Epinephrine
 - c) Parathyroid hormone (PTH)
 - d) Insulin
2. Coenzyme A is derived from which vitamin
 - a) Thiamine
 - b) Pyridoxine
 - c) Cobalamin
 - d) Pantothenate
3. Which one of the following trace element deficiency causes loss of taste sensation
 - a) Copper
 - b) Iron
 - c) Zinc
 - d) Selenium
4. Which of the following nonproteins can act as an enzyme.
 - a) DNA
 - b) RNA
 - c) Phospholipid
 - d) Glycolipid
5. Thermogenin is found in
 - a) Thyroid Gland
 - b) Thymus Gland
 - c) Brown Adipose Tissue
 - d) Adrenal Gland
6. Anticoagulants used in biochemical tests are
 - a) Heparin
 - b) EDTA
 - c) Potassium or Sodium oxalate
 - d) All of the above
7. Insulin /Glucagon ratio is high in the
 - a) Well-fed state
 - b) Overnight fast
 - c) Early fasting state
 - d) All the above
8. In the well fed state, all the following pathways are active in the liver, except
 - a) Glycolysis
 - b) Glucose uptake by hepatocytes
 - c) Gluconeogenesis
 - d) Glycogenesis
9. Earliest Marker of myocardial Infarction is
 - a) Ck₁
 - b) Ck₂
 - c) Ck₃
 - d) Ck₄

10. Antidote kits for cyanide poisoning contain

- a) Amyl nitrate
- b) Sodium nitrite
- c) BAL
- d) Both A and B

Essay/ Long Answer Questions:

2 X 15 = 30

11. A 6-year-old was brought to OPD with a history of slow growth and pain in bones. On examination revealed bow leg deformities; frontal bossing; pigeon chest deformities. Laboratory investigations shows:-
Serum Calcium = 7.9mg%, Serum Phosphorus = 2.4mg%, Serum alkaline phosphatase = 690U/L.

- a) What is the likely diagnosis?
- b) Write in detail about dietary sources, daily requirement, biochemical functions, regulation of blood calcium homeostasis and diseased conditions of the deficient mineral element.
- c) Write the normal levels of the above lab tests in serum. (2+10+3)

12.a) Classify the Enzymes? Giving one example for each.

- b) What are factors influencing enzyme activity?
- c) What are the different types of enzyme inhibition. Explain with suitable examples.
- d) Clinical importance of inhibition. (3+4+4+4)

Short Answer Questions:

7 X 6 = 42

13. Polymerase chain reaction (PCR) and its clinical application. What is RTPCR?

14. What are the sources of Dietary fibre? Discuss the importance of it in Nutrition.

15. Schematic representation of Electron transport chain. Add a note on Uncouplers.

16. Describe how physician is important in health care system?

17. Define BMR. What are the factors regulating BMR.

18. Describe in detail on the metabolism of Galactose and add a note on disorders of it correlating clinically.

19. Outline the Denovo synthesis of fatty acid. What are the advantages of having a multifunctional enzyme complex?

Very Short Answer Questions:

6 X 3 = 18

20. Glycated Haemoglobin & its clinical interpretation.

21. Fluid mosaic model of membrane.

22. Benedict's test.

23. Hetero polysaccharides.

24. Write on the classification and characteristics of Hyper and Hypolipoproteinaemia's.

25. Wernicke – Korsakoff syndrome.
