

KALOJI NARAYANA RAO UNIVERSITY OF HEALTH SCIENCES

WARANGAL, TELANGANA STATE – 506 002

MBBS FIRST YEAR EXAMINATIONS: SEPTEMBER, 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. Which one of the following statement is correct regarding HDL (High density lipoprotein)
 - a) It transport dietary lipids from the intestine to various tissues
 - b) It transports endogenous lipids from the liver to the peripheral tissues
 - c) It transports cholesterol from the peripheral tissues to the liver
 - d) It transports the fatty acids released by lipolysis
2. During starvation, the brain derives most of its energy needs by utilizing the following
 - a) Fatty acids
 - b) Ketone bodies
 - c) Amino acids
 - d) Glucose
3. Enzymes catalyzing electron transport are present mainly in the
 - a) Ribosomes
 - b) Endoplasmic reticulum
 - c) Lysosomes
 - d) Inner mitochondrial membrane
4. The carbohydrate of the blood group substances is
 - a) Sucrose
 - b) Fucose
 - c) Arabinose
 - d) Maltose
5. Fluoride inhibits _____ and arrests glycolysis.
 - a) Glyceraldehyde-3-phosphate dehydrogenase
 - b) Aconitase
 - c) Enolase
 - d) Succinate DH
6. All the following statements about carnitine are true except
 - a) It can be synthesized in the human body
 - b) It *can be* synthesized from methionine and lysine
 - c) It is required for transport of short chain fatty acids into mitochondria
 - d) Its deficiency can occur due to haemodialysis
7. Lieberman-Burchard reaction is performed to detect
 - a) Cholesterol
 - b) Glycerol
 - c) Fatty acid
 - d) Vitamin D
8. The active form of vitamin D is
 - a) 1, 25 —DHCC
 - b) 1,24 — DHCC
 - c) 24,25 — DHCC
 - d) 25- HCC

9. Kwashiorkor occurs when the diet is severely deficient in
- Iron
 - Calories
 - Proteins
 - Essential fatty acids
10. Keshan disease occurs due to the deficiency of
- Selenium
 - Chromium
 - Cobalt
 - Manganese

Essay/ Long Answer Questions:

2 X 15 = 30

11. A 60-year-old male presented with acute chest pain of ½ hour duration. His past history reveals as a known diabetic; known hypertensive, known smoker and known alcoholic. The biochemical analysis are as follows:

Blood glucose = 380 mg%, Serum cholesterol = 300 mg%

AST = 60 U/L, ALT= 15 U/L, CPK & LDH were elevated.

- Give your provisional diagnosis and meaning of it.
- Explain in detail about cardiac markers with graph patterns.
- What are the other markers which can be estimated in this case.
- Write the normal values of all of the above lab tests.

(3+5+3+4)

12. Write in detail on the metabolism of Iron- the essential trace element in the following headings

- What are the other essential trace elements, name them?
- Describe the dietary source, daily requirement, factors affecting 'Fe' absorption, transport, storage, biochemical functions and deficiency manifestations of the mineral.
- Specially explain the mucosal block theory of Iron absorption to support the statement – Iron is a one-way element.

(1+10+4)

Short Answer Questions:

7 X 6 = 42

- Write about the structural and functional organization of electron transport chain. Add a note on inhibitors of it.
- Write about Ketone body's synthesis and discuss the importance.
- Describe the role of a physician in health care system
- Discuss in detail on the regulation of blood glucose level (Homeostasis of blood glucose level) and define hypoglycaemia. Write in detail on various causes of Hypoglycaemia.
- Define phospholipids. State their function and importance.
- Write in detail on the biochemical function, RDA, and deficiency manifestations of Vitamin A.
- Discuss in detail on the transport mechanisms/process across the cell membranes.

Very Short Answer Questions:

6 X 3 = 18

- What is the principle, procedure and clinical application of radio immunoassay.
- Mention biological active form of folic acid. How is it involved in one carbon metabolism?
- Polysaccharides.
- Vitamin K cycle – biochemical function of vitamin K.
- Glycogen storage disorders.
- Biochemical function of selenium.
