

**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
- c) It transports cholesterol from the peripheral tissues to the liver
- b) It transports endogenous lipids from the liver to the peripheral tissues
- 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~~
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- c) Amino acids  
b) Ketone bodies  
d) Glucose
- 3) Enzymes catalyzing electron transport are present mainly in the
- a) Ribosomes  
b) Endoplasmic reticulum  
c) Lysosomes Enolase  
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  
c) Enolase  
b) Aconitase  
d) Succinate DH
- 6) All the following statements about carnitine are true except
- a) It can be synthesized in the human body  
c) It is required for transport of short chain fatty acids into mitochondria  
b) It can be synthesized from methionine and lysine  
d) Its deficiency can occur due to haemodialysis
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- 7) Lieberman-Burchard reaction is performed to detect
- Cholesterol
  - Glycerol
  - Fatty acid
  - Vitamin D
- 8) The active form of vitamin D is
- 1,25-DHCC
  - 1,24-DHCC
  - 24,25-DHCC
  - 25-HCC
- 9) Kwashiorkor occurs when the diet is severely deficient in
- Iron
  - Proteins
  - Calories
  - Essential fatty acids
- 10) Keshan disease occurs due to the deficiency of
- Selenium
  - Cobalt
  - Chromium
  - Manganese

## **Essay/ Long Answer Questions:**

**2 X 15 = 30**

11) A 60-year-old male presented with acute chest pain of  $\frac{1}{2}$  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.

- a) Give your provisional diagnosis and meaning of it.
- b) Explain in detail about cardiac markers with graph patterns.
- c) What are the other markers which can be estimated in this case.
- d) 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

- a) What are the other essential trace elements, name them?
- b) Describe the dietary source, daily requirement, factors affecting 'Fe' absorption, transport, storage, biochemical functions and deficiency manifestations of the mineral.
- c) 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:

7X6 = 42

- 13) Write about the structural and functional organization of electron transport chain. Add a note on inhibitors of it.
  - 14) Write about Ketone body's synthesis and discuss the importance.
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- 15) Describe the role of a physician in health care system
- 16) 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.
- 17) Define phospholipids. State their function and importance
- 18) Write in detail on the biochemical function, RDA, and deficiency manifestations of Vitamin A.
- 19) Discuss in detail on the transport mechanisms/process across the cell membranes.

### **Very Short Answer Questions:**

**6X3 = 18**

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

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