

**KALOJI NARAYANA RAO UNIVERSITY OF HEALTH SCIENCES
WARANGAL, TELANGANA– 506 002**

MBBS FIRST YEAR SUPPLEMENTARY EXAMINATIONS: NOVEMBER, 2024

BIOCHEMISTRY

PAPER – II

Time: 3 Hours

Max Marks: 100

Note: Answer all questions

Give Diagrammatic representation wherever necessary

Multiple Choice Questions:

10 X 1 = 10

1. Name the defective enzyme in maple syrup urine disease (Branched Chain Ketonuria)
 - a) Cystathionine
 - b) Phenyl alanine hydroxylase
 - c) Homogentisic acid oxidase
 - d) Oxidative decarboxylase
2. Increased gastric HCl secretion is found in
 - a) Zollinger- Ellison syndrome
 - b) Gastric carcinoma
 - c) Pernicious anemia
 - d) Gastritis
3. The serum enzyme used to evaluate pancreatic function is
 - a) Acid phosphatase
 - b) Amylase
 - c) Alkaline phosphatase
 - d) Lactate dehydrogenase
4. Which of the following enzymes are involved in Biotransformation?
 - a) Transaminases
 - b) Cytochrome P450 enzymes
 - c) Dehydrogenases
 - d) Decarboxylases
5. Which one of the following enzymes is not a protein, but an RNA molecule
 - a) Amylase
 - b) RNA polymerase
 - c) Urokinase
 - d) Reverse transcriptase
6. An amino acid not found in proteins is
 - a) Homocysteine
 - b) Proline
 - c) Lysine
 - d) Histidine
7. Following are the beneficial effect of Reactive Oxygen Species (ROS), except
 - a) Bactericidal effect
 - b) Reduces blood pressure
 - c) radiotherapy
 - d) Mutations
8. The most abundant protein in mammals is
 - a) Albumin
 - b) Globulins
 - c) Collagen
 - d) Elastin
9. Which of the following is not a biologically important peptide.
 - a) Glutathione
 - b) Angiotensin
 - c) Vasopressin
 - d) leukotriene
10. Which one of the following enzyme acts as biomarker in the diagnosis of prostate cancer
 - a) Amylase
 - b) AST
 - c) Acid phosphatase
 - d) Alkaline phosphatase

Write an essay on the following:

2 X 15 = 30

- 11.** A 16-year old boy who was given blood transfusion recently had presented with chills and rigors of 2 days duration. Laboratory investigations revealed the following findings:

Serum total bilirubin: 4.8 mg/dL, Serum conjugated bilirubin : 0.2 mg/dL,

Urine Bilirubin: Negative, Van den Bergh reaction is indirect positive.

- What is the probable diagnosis?
 - How do you relate the history and laboratory findings to confirm your diagnosis? (Use flow chart to explain if required)
 - Describe normal bilirubin metabolism.
 - Name the test performed to identify presence of bile pigments in the urine.
- (1+4+8+2)

- 12.** Explain the structure of DNA under the following headings:

- Using a neat a labelled diagram explain the structural organization of DNA.
 - Name the histone proteins.
 - Compare and contrast the differences between DNA and RNA.
 - Name the different forms of DNA.
- (8+2+3+2)

Write a short essay on the following:

7 X 6 = 42

- Name the different levels of the structural organization of proteins. Discuss the secondary structure of proteins and add a note on the bonds responsible for stabilizing the secondary structure.
- Write the compounds derived from glycine and their importance
- Explain how learning influence the Physician Growth.
- What are tumor markers? Discuss the clinical utility of any three tumor markers.
- Describe in detail the glomerular function tests. Add a note on the formulae available for calculating estimated glomerular function rate (eGFR).
- Describe the structure of normal haemoglobin molecule. Add a note on Thalassemia.
- Explain with diagram the structure of IgG molecule and indicate its binding sites and function of IgG.

Write briefly on the following:

6 X 3 = 18

- Name the plasma proteins. Write the functions of serum albumin.
- Operon Concept.
- Name the thyroid function tests. Write the reference range for T4 and TSH.
- Post translational modifications.
- Phase I detoxification reactions.
- Alkali reserve.
