

M.Sc. in Medical Biochemistry
Second Paper (100 Marks)

All questions are to be answered

- i. Write on each of the followings: (30 marks)**
1. The central role of glutamate in ammonia metabolism
 2. Role of cytochrome P450 in xenobiotic metabolism
 3. Oxidation of palmitate
 4. Conversion of propionyl CoA to glucose
 5. Synthesis and biochemical importance of PAF
- ii. Give an account on the catalytic activity and regulatory mechanisms of each of the following enzymes : (30 marks)**
1. Phosphofructokinase -2
 2. PDH enzyme complex
 3. L-glutamate dehydrogenase
 4. Carbomoyl phosphate synthetase I
- iii. Give an account on (20 marks)**
- A. Structure, synthesis and mechanism of action of cortisol with reference to one of the inborn errors of the enzymes involved in the synthetic pathways (15 marks)
 - B. Structure of collagen fiber (5 marks)
- iv. Write on: (20 marks)**
- A. Sulfur containing vitamins with reference to the function and deficiency one of them. (6 marks)
 - B. Function and deficiency of vitamin A (4 marks)
 - C. Sources and consequences of oxidative stress (10 marks)

Good luck

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i. On biochemical basis, explain the following statements: (30 marks)

1. The antioxidant effect of GSH in liver cell, is not affected in patients with favism
2. Patients with Refsum's disease are mentally retarded
3. Patients with McArdl's disease are intolerant for exercise
4. Stored blood is not recommended for use for transfusion
5. Cataract is one of the sequel of galactosemia

ii. Write short notes on the following items (50 marks)

1. Nucleotide excision repair
2. Structure and function of prokaryotic RNA polymerase
3. DNA methylation
4. Restriction endonucleases
5. Post translation modification
6. Forms of DNA double helix

iii. Give an account on each of the followings: (20 marks)

1. From the products of HMP shunt how to form dADP
2. Importance of xanthine oxidase with reference to the reactions catalyzed by it
3. Orotic aciduria

Good luck