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01113A

First M.B.B.S. (2019) Examination, (Phase - III) Winter - 2021
BIOCHEMISTRY - I

Total Duration : Section A + B = 3 Hours

Section B Marks : 80

SECTION - B

Instructions : *1) Use blue/black ball point pen only.*

*2) Do not write anything on the **blank portion of the question paper**. If written anything, such type of act will be considered as an attempt to resort to unfair means.*

*3) **All** questions are **compulsory**.*

*4) The number to the **right** indicates **full** marks.*

*5) Draw diagrams **wherever** necessary.*

6) Distribution of syllabus in Question Paper is only meant to cover entire syllabus within the stipulated frame. The Question paper pattern is a mere guideline. Questions can be asked from any paper's syllabus into any question paper. Students cannot claim that the Question is out of syllabus. As it is only for the placement sake, the distribution has been done.

7) Use a common answer book for Section B.

2. Brief answer questions (any ten out of Eleven): **[10 × 2 = 20]**

a) Name marker enzyme for i. Cytoplasm and ii. Golgi complex

b) Structural difference between starch and glycogen.

c) Explain why NADH transferred through glycerol phosphate shuttle generates 1.5 ATPs?

d) Name any two peroxisomal biogenesis disorders.

e) Explain why copper deficiency leads to defective collagen formation?

f) Name two Zinc containing metalloenzymes.

g) Define mutagens. Give two examples.

h) Explain why HMP shunt is important to prevent Met-hemoglobinemia?

i) Enumerate four food sources highly rich in proteins.

j) Name two antioxidant lipotropic factors.

k) Name two long chain fatty acids.

3. Short answer questions (any Eight out of nine): [8×5=40]

a) A baby girl who has been chronically ill and lethargic was found to have enlarged liver.She is diagnosed to be suffering from Von Gierkes disease. [1+2+2]

1. Write the reaction catalysed by the deficient enzyme.
2. Give reasons for fasting hypoglycemia in such patients.
3. Biochemical mechanism for hyperuricemia in such patients.

b) Oxidation of xenobiotics by cytochrome P-450.

c) Briefly explain the mechanism of Apoptosis.

d) Enumerate various antioxidants. Briefly describe the roles of any four antioxidants. [1+4]

e) A 56 year old male on investigation had Serum Cholesterol of 424 mg/dL. [1+2+2]

1. What is the associated risk?
2. Name the drug of choice to reduce serum cholesterol and its mechanism of action.
3. Why hypothyroidism can lead to increase in serum cholesterol?

f) Describe the pathway of Cori's cycle. Explain "Oxygen debt" after vigourous exercise. [3+2]

g) Define phospholipids. Enumerate four functions of Phospholipids with suitable examples.

h) Allosteric regulation of enzymes with suitable examples.

i) Briefly describe the importance of effective communication in medical field.

4. Long Answer Questions (Any Two out of Three) [2×10=20]

a) Define isoenzymes. Describe various isoenzymes with their clinical significance. [2+8]

b) Discuss hormonal regulation of blood glucose. Add a note on HbA1 C.[7+3]

c) Explain the pathway for synthesis of ketone bodies. Give reason for ketosis in starvation and uncontrolled diabetes mellitus. [6+2+2]

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