Date: 19-02-2024

0224E 658

First Year MBBS Examination

I MBBS Biochemistry Paper 2

Time: 3 hours

Max Marks: 100

Instructions:

1. Answer to the points.
2. Figure to the right indicates marks.
3. Use separate answer books for each section.
4. Draw diagrams wherever necessary.
5. Write legibly.

Section 1

1. Structured Long Question (Any lout of 2) (1x10 =10)

a) Describe the different types of RNA.

Give a detail account of the fannie

process. How it is regulated? Name the inhibitors of transcription. (1+5+2+2)

b) Explain the catabolism of purines & Write a note on Gout. (6+4)

2. Case based scenario/Applied short note (Any 2 out of 3) (2x6=12)

a) A l4 years old boy is hospitalized with symptoms of weight loss, diarrhea, dermatitis and dementia. (12)

i. Name the disease. ii. Mention four important dietary sources. iii. Mention the active forms of above deficient biomolecule. iv. Give the two biochemical reactions of above deficient molecule. (1) (1) (4) (2)

b) 55 year old man came to the orthopedic OPD with complaints of pain, redness and swelling in the left

great toe. Investigations revealed serum uric acid concentration of 10 mg/dl.

i. What is the probable diagnosis ? (1)
ii. Normal range of uric acid iii. (1)
Describe the various types of this disease. iv. Mention the drug that (4)
can be used to treat this and explain its mechanism of action. (2)

c) A three weeks old male infant with mental retardation and convulsions. This infant being investigated biochemically paper chromatography for amino acids profile showed abnormal elevation of phenylalanine levels.

i. Name the enzyme, which is most likely to be defective. ii. Name the (1)
screening test available. iii. Give (1)
the clinical feature of this disease. (4)
iv. What is the diet and treatment for

this disease?: (2)

3. Write short notes (Any 3 out of 4) (3x6=18)

a) Metabolic changes in starvation.

b) Lipid peroxidation

c) Polymerase chain reaction

d) Protein energy malnutrition

4. Answer only in 2-3 sentences (Any 5 out of 6) (5x2=10)

a) Enlist any four features of genetic code.

b) Basal metabolic rate

c) Write the role of chaperons.

d) Dietary importance of fiber

e) Give the biochemical basis of alkaptonuria

f) Respiratory burst

Section 2

5. Structured Long Question (Any lout of 2) (1x10 =10)

a) Describe the reactions of the urea cycle. Explain how urea cycle is linked to the citric acid cycle. Explain the biochemical basis of neurotoxicity in hyperammonaemia. (6+2+2)

b) Describe the RDA and sources of vitamin D. Write biochemical functions and deficiency manifestations of vitamin D, How vitamin D acts as hormone.

6. Write short notes (Any 2 out of 3) (2+6+2)
(2x6=12)

a) Rickets

b) Fate of glycine

c) One carbon metabolism

7. Write short notes (Any 3 out of 4)
(3x6=18)

a) Biologically important peptides.

b) Mechanism of action of steroid hormone.

c) Applications of recombinant DNA technology

d) Storage forms of iron and factors affecting iron absorption

8. answers only in 2-3 sentences (Any 5 out of 6) (5x2=10)

a) Enumerate the products of tyrosine

b) What is neural tube defect

c) Define isoeletric pH

d) Name collagen disorders

e) What are G proteins ~

f) Enumerate the features of scurvy