03-03-2021

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I-MBBS

(This paper consists of 2 pages)

First M.B.B.S. (Main) Examination (New Scheme)

February - 2021

~~PHYSIOLOGY~~ BIOCHEMISTRY

Paper- I

Time: Three Hours

Maximum Marks: 100

Attempt all questions in both sections

(Use separate answer book for each section)

Section-A

1. Fill in the blanks: 6 x 1 = 06

   a) Inherited disorder characterized by absence of peroxisomes in the cells is _____.

   b) Coenzyme required in Transmination reaction _____.

   c) Polysaccharide used as a plasma substitute _____.

   d) Abnormal accumulation of sphingomyelins in the liver, spleen and brain causes _____.

   e) Purely Ketogenic amino acid _____.

   f) Main storage form of Iron is _____.

2. Choose the correct option in the following multiple choice questions: 4 x 1 = 04

   A) Vitamin Niacin is synthesized from amino acid:

   a) Tyrosine b) Arginine c) Tryptophan d) Methionine

   B) Example of high energy compound is:

   a) Glucose-1-Phosphate b) Glucose-6-Phosphate

   c) Fructose-6-Phosphate d) Acetyl CoA

   C) Laboratory evaluation of acid-base imbalance involves estimation of:

   a) pH b) HCO_3 c) pCO_2 d) All

   D) Porphyria inherited as Autosomal recessive disorder is:

   a) Congenital Erythropoietic Porphyria b) Erythropoietic Protoporphyria

   c) Porphyria Cutanea Tarda d) Variegate Porphyria

3. A 6 month old boy was brought to Pediatrician with a history of very light colour hairs and eyes and looked much fairer than his parents and siblings. He was also delay in developmental milestones. Mother also gave a history of seizures, frequent skin infection and an unusual mousy odour to his skin, breath and urine. 5 x 3 = 15

   a) What is the probable diagnosis and suggest its cause.

   b) Why his skin and hair color is fair?

   c) Which test in blood and urine is to be performed?

   d) Why there is delay in developmental milestones?

   e) What is the treatment?

4. Write short notes on (Any five): 5 x 2 = 10

   a) Enlist the substrates of Gluconeogenesis

   b) Ketosis

   c) Calcitriol

   d) Lesch-Nyhan Syndrome

   e) Anion-Gap

   f) Transaminases

5. Explain briefly (Any three): 3 x 5 = 15

   a) Kerbs Henseleit Cycle

   b) Catabolism of Purine and its disorders

   c) Functions of Vitamin C

   d) Chemiosmotic theory

Section-B

6. Define lipoproteins with examples. Explain the metabolism of HDL cholesterol and its role in health and disease. 20

7. Explain Why (Any five): 5 x 2 = 10

   a) Neonates are more susceptible to develop Vitamin K deficiency.

   b) Eating maize causes pellagra like symptoms.

   c) Essential fatty acids helps in prevention of fatty liver.

   d) Hyperuricemia is associated with Von-Gierke's disease.

   e) Direct bilirubin is increased in Obstructive Jaundice.

   f) HbA1c is a good indicator of sugar control in T2DM.

8. Explain briefly (Any four): 4 x 5 = 20

   a) Isoenzymes.

   b) Laboratory diagnosis of diabetes mellitus.

   c) Maple syrup urine disease.

   d) Antioxidant vitamins.

   e) Functions of calcium