I MBBS Biochemistry Paper 1

Date: 17-02-2024

0224E 657

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 1 out of 2) (1x10=10)

a) Describe the pathway of Glycolysis. Explain its energetics. Write a note on Rapoport Luebering shunt. (6+2+2)

b) Explain the heme synthesis. Add note on thalassemia (6+4)

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

a) A premature born baby with yellow coloration of the eyes showed 11 mg/dl of total serum bilirubin, most of it being unconjugated type. The baby was kept under ultraviolet light lamp. The serum bilirubin level return to normal after 9 days.: (1+14+2+2) a. What is the probable diagnosis? b. What is the reason behind the transient increase in serum bilirubin? c. What is the basis of UV light therapy? d. What are the consequences if the serum bilirubin levels increase beyond 20mg/dl ? (10)

b) A32 years old heavy smoker developed sudden crushing chest pain. He was admitted to the casualty department Myocardial infarction was confirmed. (1+2+1+2) a. Is there any relationship

between smoking and myocardial infarction? b. What are the preventive measures against the development of heart disease? c. Name the lipoprotein that has protective effect against the development of MI. d. Write the cardiac markers. (12)

c) A 12 years old girl was admitted to hospital. Her mother mentioned that her daughter had been losing weight and had polyuria. The Doctor noticed a fruity breath. On admission the followin biochemical parameters of urine and blood were obtained. GI+2+2 Urine pH 5.4 Urine glucose (+++) Blood glucose - 460 mg/dl Urine ketone positive. a, Which type of diabetes she is suffering from? b. What is the cause of fruity breath? c. What are the causes of weight loss? S d. Name the ketone bodies.

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

a) Biomedical importance of heteropolysaccharide

b) Significance and disorders of HMP shunt pathway

c) Explain the chemiosmotic theory of oxidative phosphorylation

d) Describe the importance of effective communication in medical field (18)

4. Answer only in 2-3 sentences (Any 5 out of 6) (2x5 =10)

a) What are uncopulers. Give examples

b) Creatinine clearance

c) What are Bence Jones protein

d) Adverse effect of trans fatty acids on health

e) Name two lysosomal disorders

f) Diagnostic tests for sickle cell anemia pe (10)

Section 2

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

a) Describe the diagnostic role of isoenzymes in any two diseases with example. Therapeutic applications of enzymes (6+4)

b) Describe cholesterol biosynthesis with its regulation. Add note on atherosclerosis (743)

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

a) Factors affecting enzyme activity

b) Different types of transport systems across cell membrane.

c) Types and function of Immunoglobulin (12)

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

a) Essential fatty acids

b) Detoxification by phase I reactions

c) Tumor markers

d) Hormonal regulation of water balance

(18)

8. answers only in 2-3 sentences (Any 5 out of 6) (2x5=10)

a) Enumerate the causes of respiratory acidosis

b) Define phospholipids. Give examples

c) Define isoenzymes with suitable examples

d) Define coenzyme.Write coenzymes of niacin

e) Enumerate the causes of fatty liver

f) Applications of chromatography = (10)