Paper Code-010301

M.B.B.S. 1st professional Annual University Examination

Biochemistry

PAPER-I

Time: 3 Hours Maximum Marks: 100

Note:

- The candidates must limit their answers to the answer book (30 Pages) issued to them. No supplementary/Continuation answer sheet shall be provided
- Attempt all questions sequentially.
- Attempt Part-A & Part-B in separate answer books and Part-C in OMR sheet. Illustrate your answers with suitable diagrams, graphs and flow charts.
- OMR sheets shall be collected 20 minutes after starting of examination.

Section A **Total-40 Marks**

Q1. A 52-year-old male admitted in hospital emergency centre with chest pain which he describes as a pressure behind his breastbone that spreads to the left side of the neck along with nausea and sweating. **1+5+4=10 Marks**

a) What is the most likely diagnosis?

b) What are the different cardiac biomarkers to be estimated on an emergency basis?

c) What are the investigations advised and the normal range of the performed parameters.

Q2. Short Notes: **4x5=20 Marks**

a) Fluid mosaic model

b) Isoelectric pH

c) Von Gierk's Disease

d) Mucopolysaccharides

Q3. Short Answer Questions : **5x2=10 Marks**

a) What are the major actions of insulin?

b) What is Principle of Benedict's test?

c) Why is mitochondria called the powerhouse of cell?

d) What are the functions of lysosomes?

e) What is the difference between glucokinase and hexokinase?

Section B

Total Marks-40

Q1. A man of 45 who is slightly overweight and has a sedentary job had a health check up and was told that his lipid profile was abnormal. **2+4+4=10 Marks**

a) What are the parameters included in lipid profile?
b) What are the complications of hypercholesterolemia?
c) What are the life style modifications suggested?

Q2. Short Notes: **4x5=20 Marks**

a) Role of Carnitine in Fatty Acid Oxidation
b) Biological actions of prostaglandins.
c) Lesch-Nyhan syndrome.
d) Phenylketonuria.

Q3. Short Answer Questions: **5x2=10 Marks**

a) Explain the functions of Glutathione in the body.
b) Clinically important transaminases.
c) What is the mechanism of methotrexate?
d) What is the significance of Lp(a)? lipoprotein - cardiac risk
e) What is Homocystinuria?

Section-C

1x20=20 Marks

Q1. What is the function of Golgi complex?

a. Drug metabolism
b. Glucose transportation
c. Glycosylation of proteins
d. Electron transport chain

Q2. All of the following are sulfur containing amino acids, except:

a. Cysteine
b. Methionine
c. Homocysteine
d. Threonine

Q3. Which is a nonreducing sugar?
a. Maltose
b. Sucrose
c. Lactose
d. Isomaltose

Q4. Which of the following is characteristic of untreated diabetes regardless of type?
a. Hyperglycemia
b. Ketoacidosis
c. Obesity
d. Low Hba1c

Q5. Which of the following is a storage form of energy?
a. Glycogen
b. Glycerol
c. AMP
d. Lactate

Q6. The key enzyme in fatty acid synthesis is :
a. Acetyl-CoA carboxylase
b. Beta hydroxyacyl dehydratase
c. Enoyl reductase
d. Acetyl transacylase

Q7. Phagocytosis involves :
a. Respiratory burst
b. Lipid peroxidation
c. Alpha oxidation
d. Endosmosis

Q8. Fluidity of membranes depends on:
a. Nature of fatty acids
b. Concentration of proteins
c. Membrane pumps
d. Glycosylation of proteins

Q9. The main apoprotein present in the LDL is:
a. A and D
b. B-100
c. E2 and C
d. B-48

Q10. Normal serum Creatinine level is:
a. 0.2-0.4 mg/dL
b. 0.3-0.6 mg/dL
c. 0.7-1.4 mg/dL
d. 1.4-2.8 mg/dL

Q11. The chief product of catabolism of purines in human beings is:
a. Urea
b. Uric acid
c. Hypoxanthine
d. Beta aminoisobutyric

Q12. Which tissue is most insulin sensitive?
a. Brain
b. Liver
c. Adipose tissue
d. Cardiac muscle

Q13. Which amino acid will give rise to an inhibitory neurotransmitter?
a. Histidine
b. Glutamic acid
c. Ornithine
d. Tyrosine

Q14. ETC is located in the:
a. Outer mitochondrial membrane
b. Inner mitochondrial membrane
c. Mitochondrial matrix
d. Nucleus

Q15. Which of the electron carriers is soluble and mobile?
a. CoQ
b. Cytochrome c
c. Cytochrome a
d. Cytochrome b

Q16. Serotonin is derived from which amino acid?
a. Tyrosine
b. Tryptophan
c. Glutamic acid
d. Histidine

Q17. Absorbed triglycerides are transported in blood as:
a. Cholecystitis
b. Chylomicrons
c. Globulin
d. Ferritin

Q18. The enzyme:
a. Reduces the energy of activation
b. Increases total energy of substance
c. Increases the equilibrium constant
d. Increases total energy of the product

Q19. All are substrates for gluconeogenesis during starvation, except:
a. Alanine
b. Glycerol
c. Glutamine
d. Acetyl CoA

Q20. The coenzyme which is not a derivative of B complex vitamin?
a. FAD
b. NAD
c. TPP
d. Carnitine