Sendup 2013 Biochem C8 Sendup 2013 (9)

Azra Naheed Medical College, Lahore.

Quratulain Rollno 14

2nd Year MBBS 2013 — Time: 2 Hours

Send up Examination — Marks: 60

Attempt all Questions

1. (a) Draw electron transport chain, mention its various components. Name the inhibitors of electron transport chain with their sites of actions. 75 – Lipoic acid [3]

   (b) Write a short note on chemiosmotic theory. 77-12 [2]

2. (a) Enumerate pancreatic enzymes and give their functions. [3]

   (b) Enumerate functions of saliva. [2]

Lubrication and moistening
Digestive action
Stimulating effect
cleansing action
Protection of teeth
Esophageal acid clearing
Excretory function
secretory function
Regulation of water metabolism

Carbohydrate metabolism

3. (a) Name the compounds which can be used for gluconeogenesis, mention the irreversible steps of glycolysis & how these are by passed. Pyruvate, Glycerol, Lactate, α-ketoacid [3]

   (b) Give reasons, complications and remedy for galactosemia. 239 [2]

4. (a) Write down the steps of citric cycle with enzymes and factors, also calculate energy produced in this cycle. 86 – F [3]

   (b) What is the significance of Hexose Monophosphate shunt? 95 – P [2]

5. (a) Draw urea cycle with enzymes and factors. What is the significance of biosynthesis of urea? 103 – F [3]

   (b) What is phenyl Ketonuria, mention its causes and biological effects? 108 – F [2]

6. (a) Enumerate specialized compounds formed from glycine. → Heme, creatine, purine nucleotides, Hippuric acid [3]

   (b) What are the physiological actions of Nitric oxide (NO). How it is formed in the body? Glutathione [2]

Vasodilator, Platelet depressor
inhibit Platelet aggregation
Reduced GIT motility

7. (a) Name primary and secondary bile acids, mention their sites of synthesis and physiological functions. What is enterohepatic circulation of bile acids? [3]

   (b) What is the role of Carnitine in β- oxidation of fatty acids, name the regulatory enzyme of β- oxidation. Thiokinase [2]

Cholic | Liver
Chenodeoxy cholic acid
Deoxycholic acid | Intestine
Lithocholic acid

190

P.T.O

AZRA NAHEED MEDICAL COLLEGE 2014

BIOCHEMISTRY DEPARTMENT

2nd year MBBS

Send Up Examination 2014

Attempt All Questions

Marks=45

Time=2.5 Hours

Q#1 (a) Enumerate pancreatic enzymes and give their functions (03)
(b) Describe the digestion and absorption of lipids. (02)

Q#2 (a) What is gluconeogenesis? Mention the irreversible steps of glycolysis and how these are bypassed in gluconeogenesis. (03)
(b) Draw the steps of citric acid cycle also mention factors and enzymes. How many ATPs are formed in citric acid cycle? (02)

Q#3 (a) Define oxidative Phosphorylation. Describe various uncouplers and their mode of action in oxidative Phosphorylation. (03)
(b) What is chemiosmotic theory (02)

Q#4 (a) Draw Urea cycle with enzymes and factors. What is the significance of biosynthesis of Urea? (03)
(b) Enumerate specialized compounds formed from Glycine (02)

Q#5 (a) How pyrimidine bases are synthesized, mention the steps with enzymes. (03)
(b) What is orotic aciduria? (02)

Q#6 (a) How uric acid is formed from purine bases in the body? Give Biochemical reasons of gout along with its treatment (03)
(b) Enlist Ketone bodies. How these are formed in the body (02)

Q#7 (a) Write down the steps of Beta oxidation. How many net ATPs are formed by the oxidation of Palmitic acid? (03)
(b) What are eicosanoids? Give biological functions of Prostaglandins (02)

Q#8 (a) What is polymerase chain reaction (PCR), Mention the steps of this technique. What are its applications? (03)
(b) What is translation? Enumerate its steps with their inhibitors. (02)

Q#9 (a) Describe the effects of insulin on carbohydrates, Proteins and fat metabolism (03)
(b) Write short notes on (02)
i) Acromegally
ii) Cretinism

DEPARTMENT

Send up 2015

SEND UP EXAMIANTION 2015
2ND Year MBBS

Total marks: 70
Time Allowed: 2 ½ hours

Q No. 1.

a. Name the enzymes needed for the digestion of carbohydrates with their sites of origin (2)
b. Write down the composition and functions of bile. What is the enterohepatic circulation of bile acids? (3)
c. Enumerate pancreatic enzymes and give their functions. (3)

Q No. 2

a. Draw electron transport chain and label it (2)
b. What are uncouplers? Give an account of various uncouplers along with their mechanism of action. (3)
c. How kidneys maintain the pH of blood in metabolic acidosis and alkalosis? (2)

Q No. 3

a. Define gluconeogenesis. Name the compounds that can be used for gluconeogenesis. (2)
b. What is the significance of Hexose monophosphate pathway? (3)
c. Write down the steps of Glycolysis with enzymes & factors. How much net energy is liberated when glucose is converted to pyruvate? (2+1)

Q No. 4

a. Name the ketone bodies. Mention the conditions in which ketosis can occur. (2)
b. Mention different type of lipoproteins. Write down the composition & metabolism of chylomicrons. (3)
c. What are the alpha, beta and omega oxidation of fatty acids? How much ATPs are generated when one molecule of Palmitic acid is completely oxidized to acetyl S. Co A? (2+1)

Q No. 5

a. What are transamination & deamination? Explain with examples. (1)
b. Mention the causes and metabolic effects of phenyl ketonuria, alkaptonuria, and albinism. (4)
c. What is the significance of urea synthesis in the body? Write down the steps of urea synthesis with enzymes and factors. (1+2)

Q No. 6

a. How uric acid is formed from purine bases? (4)
b. What is Lesch Nyhan syndrome? Give its reason and complications. (2)
c. Lab findings of a 5 year old girl showed orotic aciduria
   - Locate the metabolic step involved. (1)
   - Name the concerned enzyme deficiency (1)

PTO

Q No. 7

a. Draw the structure of tRNA and label it. (3)

b. What post transcriptional changes occur in mRNA and tRNA

c. Explain various stages of initiation of replication in eukaryotes.

Q No. 8

a. Name the hormones of anterior pituitary. What happens in deficiency and, excess of ADH (3)
secretion?

b. Enumerate hormones of anterior pituitary. What is the effect of growth hormone on (3)
carbohydrate, protein and fat metabolism?

c. What is the mechanism of action of hormones? Explain with example of G-Protein coupled (2)
surface receptors (GPCRs).

Q No. 9

A fifty year old man comes into the emergency ward with dry skin and tongue. He complains of excessive thirst and frequent micturition. His blood glucose level is 380 mg/dl, ketone bodies are present in his urine and arterial blood pH is 7.25

(i) What is the probable diagnosis? (1)

(ii) Deficiency of which hormone causes this condition? (1)

(iii) What is the effect of this hormone on carbohydrate and fat metabolism? (4)

A NAHEED MEDICAL COLLEGE
DEPARTMENT OF BIOCHEMISTRY

Send up 2016

SEND UP EXAMINATION 2016
MBBS PART II – SEQs

Marks: 60
Time Allowed: 2½ Hours

Q No. 1.
a. How carbohydrates are digested and absorbed in the GIT? (2.5)
b. Enumerate pancreatic enzymes and give their functions. (2.5)

Q No. 2
a. A 55 year obese man was admitted in emergency room. He had sign of dehydration like dry tongue and pale dry skin. He had complaint of thirst and frequent micturition. His blood glucose level was 400 mg/dl. ketone bodies were present in urine and his arterial blood pH was 7.25
   1. What is the probable diagnosis? Ketonuria (1)
   2. Deficiency of which hormone causes this condition? Discuss the role of this hormone on carbohydrate metabolism. (3.5)
b. What is gluconeogenesis, name the compounds which can be used for gluconeogenesis? Mention the irreversible steps of glycolysis and how these are bypassed? (2.5)

Q No. 3
a. Name the uncouplers and mention their role in the respiratory system of the electron transport chain. (2.5)
b. Write a short note on chemiosmotic theory. (2.5)

Q No. 4
a. Write down the steps of Citric acid cycle with factors and enzymes, also discuss its amphibolic nature. (2.5)
b. Write down the significance of HMP shunt. (2.5)

Q No. 5
a. Enumerate specialized compounds formed from serine and glycine. (2.5)
b. How Nitric Oxide (NO) is formed in the body? Enumerate its physiological actions. (2.5)

Q No. 6
a. What are Phenylketonuria, Albinism and Maple syrup disease? Mention the deficient enzymes with consequences. (2.5)
b. What is the significance of urea synthesis? Mention its steps with enzymes and factors. (2.5)

Q No. 7
a. Draw the steps of fatty acid biosynthesis also mention the committed step. (2.5)
b. What are ketone bodies? How these are synthesized in the body? Why liver is unable to use ketone bodies for energy purpose? (2.5)

Q No. 8
a. What are lipoproteins? Classify them on the basis of density. Why increased level of HDL is good and increased level of LDL is harmful to health? (2.5)
b. Name cyclic and non-cyclic eicosanoids. Enumerate physiological functions of prostaglandins. (2.5)

Q No. 9
a. How pyrimidine bases are synthesized in the body? Mention the steps with enzymes. (2.5)
b. How uric acid is formed in the body? Give biochemical reasons of gout with its treatment. (2.5)

Q No. 10
a. What is the role of cortisol on carbohydrates, proteins and fat metabolisms? (2.5)
b. Mention synthesis and biological effects of hormones of adrenal medulla. (2.5)

Q No. 11
a. Explain the transcription in prokaryotes. (2.5)
b. What are mutations and mutagenic agents? Narrate different types of mutations. (2.5)

Q No. 12
a. What are the effects of increased and decreased level of Growth hormone? (2.5)
b. Describe the role of kidneys and lungs in maintenance of pH of blood. (2.5)

AZRA NAHEED MEDICAL COLLEGE
DEPARTMENT OF BIOCHEMISTRY

SEND UP EXAMINATION 2017
MBBS PART II – SEQs

Total marks: 60
Time Allowed: 2½ Hours

Q No. 1.
a. Draw electron transport chain and mention ATP synthesizing sites. (2.5)
b. What is oxidative phosphorylation? Mention various uncouplers with their mode of action in oxidative phosphorylation. (2.5)

Q No. 2
a. Describe digestion and absorption of carbohydrates in GIT. (2.5)
b. Enumerate pancreatic enzymes and give their functions. (2.5)

Q No. 3
a. Give reasons, complications and remedy of galactosemia. (2.5)
b. Write a note on Cori's lactic acid cycle. (2.5)

Q No. 4
a. Mention irreversible steps of glycolysis. How these are bypassed in gluconeogenesis? (2.5)
b. Explain with examples amphibolic nature of citric acid cycle. (2.5)

Q No. 5
a. Name ketone bodies. What is ketosis? Give its reasons and complications. Why liver cannot use ketone bodies for energy purpose but heart & brain can use for energy purpose? (2.5)
b. How palmitic acid will be oxidized in mitochondria to yield energy? Explain its steps with enzymes and factors. (2.5)

Q No. 6
a. Discuss the metabolic fate of cholesterol. (2.5)
b. Mention the reasons of phenylketonuria, alkaptonuria and albinism with their respective complications. (2.5)

Q No. 7
a. How nitric oxide (NO) is formed in the body? What are its physiological functions? (2.5)
b. What is the significance of urea biosynthesis? Draw urea cycle with enzymes and factors. (2.5)

Q No. 8
a. Lab findings of 5 years old boy showed orotic aciduria
   - Locate the metabolic area involved
   - Name the concerned enzyme deficiency
b. How uric acid is formed from purine bases? Mention its steps along with enzymes and factors. (2.5)

Q No. 9
a. Discuss the role of insulin and glucagon on carbohydrate metabolism. (2.5)
b. Write down the steps of synthesis of T3 and T4. Enumerate physiological functions of thyroid hormones. (2.5)

Q No. 10
a. Explain the synthesis of RNA from DNA in prokaryotes/ (2.5)
b. Write a short note on Lesch Nyhan syndrome. (2.5)

Q No. 11
a. Enumerate hormones of anterior pituitary. What are the function of FSH?
b. What are metabolic and non-metabolic functions of cortisol? (2.5)

Q No. 12
Write short notes on
a. Gout (2.5)
b. Acromegaly (2.5)

THE SUPERIOR COLLEGE, LAHORE

Send up 2018

SEND UP EXAMINATION 2018
MBBS PART II – SEQs
Biochemistry

Roll No. 30

Time allowed: 2½ Hours **Total marks:** 70

Instructions

1. Attempt all questions
2. The SEQ part is to be submitted within given time. Extra time will not be given.
3. Neat handwriting, use of margins and marker for headings will increase presentation of your paper.
4. Do not write your name or discuss your identity in any way

Q No. 1.

a. Draw electron transport chain. Mention its ATP producing sites. Name the inhibitors of electron transport chain. (5)

b. What is oxidative phosphorylation? Name physiological and synthetic uncouplers along with their mechanism of action. (4)

Q No. 2

a. Enumerate pancreatic enzymes with their functions. (5)

b. Write down the site of synthesis, composition and functions of bile. What is Cholelithiasis? (4)

Q No. 3

a. Write down the steps of glycolysis with enzymes and factors. How many net ATP are formed up to pyruvate synthesis? (5)

b. Give reasons, complications and remedy of galactosemia. (4)

Q No. 4

a. Name ketone bodies. How these are synthesized in the body? Why liver is unable to use ketone bodies as a fuel? (5)

b. Write down the steps of Beta oxidation of fatty acids, with enzymes and factors. (4)

Q No. 5

a. Write down the reasons, complications and remedy of Phenylketonuria, Alkaptonuria and Albinism. (5)

b. Write down the steps of urea synthesis with enzymes and factors. (4)

Q No. 6

a. How uric acid is formed from purine bases? What is gout? Discuss its symptoms with remedy. (5)

b. Give an account of recombinant DNA technology. What are its applications? (4)

Q No. 7

a. What is translation? Enumerate 4 inhibitors of translation with their sites of action. What are post translational modifications? (4+5)

b. Define the following:

(i)	Transcription	(0.5)	(iv)	Exon	(0.5)
(ii)	Replication	(0.5)	(v)	Introns	(0.5)
(iii)	Codon	(0.5)			

Glycosylation
Methylation
Hydroxylation
Carboxylation
Phosphorylation

Q No. 8

Write notes on:

(i)	Acromegaly	(3)	(iii)	Respiratory alkalosis	(3)
(ii)	Cretinism	(3)			