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	=	UG/MBBS/208(AB)
		Roll No. 24155 MEOLS
FIRST PROFESS	<u>sional m.b.b.s. (II semester) exa</u>	MINATION, 2022
	BIOCHEMISTRY	
	PAPER-II	FULL MARKS: 100
TIME: - THREE HOURS		
	o. at the top immediately on the receipt o	
NOTE: - USE S	SEPARATE ANSWER BOOKS FOR E	ACH SECTION.
	Section-A	Marks: 50
What are the sequences of ever transcription? Enumerate Post	ents in prokaryotic transcription? How a -transcriptional modification.	tre they different from eukaryotic (7+5+3=15)
		(5x5=25)
2. Write short notes on the follow (a) DNA Repair	ving:	
(b) Applications of		
(c) Tumor Lysis	Syndrome	
(d) RNA editing (e) Wobble hypot	thesis	
(c) if obbie hyper		(5.2.10)
3. Justify the following:		(5x2=10)
(a) Role of alcoh	ol in gout	
(b) Ritampicin in	hibit bacterial transcription ne in orotic aciduria	
	i/Antigene therapy in cancer treatment	
(e) Vectors use in	gene therapy.	
e e e	Section-B	Marks: 50
	Section-B	Marks. 50
4 A 65 year old female with diat	etes mellitus reaches emergency room	n with lethargy, disorientation and
long-deep breathing. Venous bl	ood glucose is 400 mg/dL and arterial	blood shows pH=7.2, HCO <sub>3</sub> =15
mmol/I and pCO2=40 mmHg.		(2+1+4+4=15)
(a) What is the most proba	able diagnosis?	
(b) What is the range of no	ormal blood pH?	
(c) Discuss the biochemica	ses that can show similar ABG result	ts
(a) Give list of other disea	ffers in maintaining acid base balance	····
· (e) Describe the role of bu	ners in manualing acta case calante	
5. Write short notes on:		(4x5=20)
	genes and tumor suppressor genes.	
(b) Electrophoresis and its	medical applications.	
(c) Immune response.		
(d) Kidney function tests.		
0.		
6. Short answer questions.		(5x3=15)
(a) Enzymes involved in xe	nobiotics metabolism	
(b) Beer Lambert Law		
(e) Anion gap		
(d) Free radicals		
(e) Superoxide dismutase.		
	XXXXXX	
$\sim$		

3rd Terminal MBBS Examination 2022

Time: 2 hours

Paper I Answer all the questions MCQ 20 Marks

1. A 45-year-old CEO who is always at his desk in an air-conditioned room complained of fatigue, tiredness, vague aches and pains in limbs. After a thorough clinical examination, the physician prescribed a battery of tests. The only abnormal laboratory parameter was a vitamin D3 level of 5 ng/mL.

What is the probable cause for the low vitamin D3 level in this man?

Which other parameters are to be measured along vitamin D3 in the assessment of bone profile? Why?

Write of 3 food items that contain vitamin D. How is supplementation done in this patient? Do you suggest any life style modification? Discuss the role of vitamin D.

2. Give a flow chart of heme biosynthesis. Summarize major features of porphyrias.

3. Answer the following questions: 7X8

a) Discuss the steps involved in fatty acid mobilization from adipose tissues and their oxidation under starvation

b) Discuss various tumour markers

c) Describe BMR

d) Define trace elements. Discuss roles of zinc and selenium.

(e) How is fructose synthesized and catabolized in our body? What is hereditary fructose intolerance?

FWhat are the different types of enzyme inhibition? Explain with suitable examples. Explain its therapeutic significance, giving two suitable examples.

g) Discuss LDL metabolism

Date: 03/12/22 Full Marks: 100

12

12

3<sup>rd</sup> Terminal MBBS Examination 2022

Date: 03/12/22 Full Marks: 100

Time: 2 hours

# Paper II Answer all the questions MCQ 20 Marks

. Discuss the regulation of eukaryotic gene expression.	12
. Discuss the vert	the help of
: What are the causes of jaundice? How will you differentiate between them with	12
iver function tests?	
	7X8
<ul> <li>3. Answer the following questions:</li> <li>a) What is metabolic acidosis? Describe its types, causes and diagnosis.</li> <li>b) Draw a labelled diagram of structure of antibody. What is Bence Jones proteinuncy of prokaryotic transcription.</li> </ul>	·ia?
c) Discuss termination of prokaryotic transcripts d) Write briefly on hormonal regulation of water homeostasis e) Discuss phase II reactions of xenobiotic metabolism	1997

f) Draw a flowchart of molecular gene cloning. What are its applications?
 g) How is uric acid synthesized in our body? Mention the diseases associated with uric acid biosynthesis.



3rd Terminal MBBS Examination 2021

Time: 3 hours

Date: 10/12/21 Full Marks: 100

## Paper I

1. A 58 years old elderly man presented in emergency with left sided chest pain radiating to left arm, profuse sweating and dyspnea. He had a history of untreated high blood pressure. His investigation results were as follows.

BP: 90/60 mm Hg

was also

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Random blood sugar: 350 mg/dl

Creatine kinase-MB: 8 ng/mL (0.0-5.5 ng/mL)

ECG shows ST segment elevation in anterolateral leads.

What is your diagnosis? Suggest and justify further investigations in this patient? Write briefly about isoenzymes with example.

2. A 13 year old boy had periodic fever for three days. He was diagnosed to have malaria caused

by P. Vivax . Along with other anti malarial drugs he was prescribed primaquine tablets. Clinician did not advise any investigation before starting primaquine. After one week of taking primaquine he developed yellowish discolouration of skin. His urine colour was normal.

What is your diagnosis? What investigation should be advised to avoid this kind of problem? What is the reason for yellowish discolouration of skin and normal coloured urine? Draw a flowchart of HMP shunt. What is its importance?

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REDMI NOTE 10S | 27/04/2022

16/05/2022 19:15

3. Write briefly on the following: a) Phenylketonuria b) Protein folding and associated disorders with misfolding c) Classify dietary fibres. Explain their biochemical role in cancer and cardiovascular disease d) Explain the metabolism in fed and starvation condition e) Enumerate Biochemical roles of vitamin A Pransamination and clinical role of Transaminases B) Ketogenesis and clinical condition associated with it HDL cholesterol i) Role of zinc and selenium j) Lipotropic factors

6X10

10X2

30

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4. Give reasoning for the following:

a) Fatty acid synthase is a processive enzyme b) Vit B12 deficiency can lead to folic acid deficiency Calcitriol is prescribed in chronic kidney disease d) Methotrexate is an anticancer drug e) For vegetarians it is necessary to take vegetable proteins from multiple sources NA 23 years old man cannot tolerate milk and milk products g) Doctor should understand the socioeconomic background of the patient h) Crigler- Najjar syndrome leads to hyperbilirubinemia DATD, for Uppyslipidemia is present in Von Gierke's disease if Only primary bile acids have role in absorption of lipid **REDMI** NOTE 10S | 27/04/2022

# 16/05/2022 19:15

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Crain the properties of genetic code. Explain different types of mutation. How does pecific properties and arrangements of genetic code help to mitigate effect of mutations.

4+4+2=10

8X5=40

4. Write short notes on the following:

a) Provide mechanisms of action for following drugs: (i) aspirin, and (ii) statins What are the sources of NADPH in the cell? Discuss the role of NADPH in fatty acid metabolism.

c] Isopeptide

Give a comparative account of glycoprotein and proteoglycan

e) Compare structure and function of haemoglobin and myoglobin

Discuss biochemical functions and deficiency symptoms of vitamin D

Tabulate difference between proto oncogenes and tumour suppressor genes

Structure of immunoglobulins with labelled diagram.

5. Give short answers/explanations to the following questions:

10X2=20

af Excess intake of fructose leads to dyslipidemia

b) G6 PD Deficiency leads to haemolytic anaemia

C) Biochemical mechanism of booster dose of vaccines

Mother complains of mousy odour in urine of neonate phungkeronuena

e) Defect in DNA repair can lead to photosensitivity

Mobilization of fatty acids from adipose tissue under fasting condition

elexample of super secondary structures

Vitamin K and post translational modification

j) Good doctor patient relationship

k) Methotrexate is an anticancer drug

# UG/MBBS/207(AB)

Roll No. .....

# FIRST PROFESSIONAL M.B.B.S. (II SEMESTER) EXAMINATION, 2020 BIOCHEMISTRY PAPER-I

TIME: - THREE HOURS

FULL MARKS: 100

(Write your Roll No. at the top immediately on the receipt of this Question Paper)

NOTE: - USE SEPARATE ANSWER BOOKS FOR EACH SECTION.

# Section-A

Marks: 50

<ol> <li>What are enzymes? Enumerate the major classe Give examples with their clinical significance.</li> <li>Write short notes on any <u>four</u>:         <ul> <li>(a) HMP-Shunt</li> <li>(b) Transport Across Cell</li> <li>(c) Cori Cycle</li> </ul> </li> </ol>	es of enzymes. What are isoenzymes? (2+4+2+4=12) (4x5=20)
<ul> <li>(d) Biological Oxidation</li> <li>(e) Fatty Acid Synthesis and its Regulation</li> <li>3. Differentiate between any <u>three</u>:</li> </ul>	s (3x4=12)
<ul> <li>(a) Hexokinase and Glucokinase</li> <li>(b) Oxidative and substrate level Phosphory</li> <li>(c) Homopolysaccharides and Heteropolysa</li> <li>(d) Clargical and Non Classical Galactosen</li> <li>4. Multiple choice questions: <ul> <li>(f) Creatine kinase level in serum is increase</li> <li>(a) Myocardial Infarction</li> <li>(c) Infective Hepatitis</li> </ul> </li> <li>(ii) Cataracts are formed due to accumulate</li> <li>(a) Xylitol in essential pentosuria</li> <li>(b) Ciective in oxidation of fatty acids cane</li> <li>(c) Hypoglycemia</li> </ul>	(1x6=6) sed in- (b) Prostate cancer (d) Intravascular Hemolysis ion of- (b) Galcitol (Dulcitol) in Galactosemia (d) Ribitol in Renal Glycosuria
(c) Myopathy (iv) Prostagalndins are stored: (a) In adipose tissue (c) As granules in mast cells	<ul> <li>(b) As plasma lipoproteins</li> <li>(d) As membrane phospholipids</li> </ul>

(v) Which of the electron carriers is soluble and mobile?

 (a) Co Q
 (b) Cytochrome-c
 (c) Cytochrome-a
 (d) Cytochrome-b

 (vi) Which of the statement regarding active transport is incorrect?

 (a) Requires carrier proteins
 (b) Energy dependent
 (c) Against concentration gradient
 (d) Transport of water is an example

P.T.O.



# UG/MBBS/208(AB)

FULL MARKS: 100

# Roll No. ......

# FIRST PROFESSIONAL M.B.B.S. (ILSEMESTER) EXAMINATION, 2029

# BIOCHEMISTRY

# PAPER-II

# TIME: - THREE HOURS

(Write your Roll No. at the top immediately on the receipt of this Question Paper)

NOTE: - USE SEPARATE ANSWER BOOKS FOR EACH SECTION.

# Section-A

(1+4+10=15)

Marks: 50

Long Answer Question:

A 70 year old male in good health previously, presented with sudden pain in the right great toe in the night after a bout of alcohol consumption. On examination, he had mild fever; his right great toe was swollen, warm, red and tender. Serum uric acid was 10 mg/dl.

(a) What is the probable diagnosis?

(b) Discuss the biochemical basis of this condition along with different types of it.

(c) Enumerate the pathway of purine nucleotide catabolism.

# ) Short Answer Question:

1) Define Induction & repression. Describe briefly about Lac Operon

2) Explain briefly about Post Transcriptional Modification

3) Discuss about Recombinant DNA technology & it's applications

4) Define Mutation. Describe about types of Mutation with examples

# (7x5=35)

- 5) Explain briefly about PCR technique & it's applications
- Describe Structure of Immunoglobulins
- 7) Name drugs which inhibits translation & describe their mechanism of action.

P.T.O.



### TIC/MDDC/207/ARV

### Section-B

-2-

A 52 year old man with presents to the emergency department history in semiconscious state; he had diabetes mellitus since 20 years. He has an SpO<sub>2</sub> of 98% on room air and is obviously tachypnea on exam with what appears to be Kussmaul's respirations. A room air arterial blood gas is performed and reveals: (3x5=15)

 pH: 7.15 (7.35-7.45)
 Sodium: 140.0 (135-1555mEq/L)

 pCO2: 21(35-45 mm of Hg)
 Potassium: 4.0 (3.5-5.5mEq/L)

 HCO3: 16.0(22-26 mm of Hg)
 Chloride: 104 (95-1055 mEq/L)

 Blood glucose: 504 mg/dl
 Chloride: 104 (95-1055 mEq/L)

- (a) Which type acid-base imbalance is evident from it this ABG report?
- (b) Define anion gap.
- (c) Calculate the anion gap in this patient.
- (d) Discuss all the possible differential diagnosis of underlying disorder in this patient?
- (c) Describe the mechanism of compensation in this disorder?

# 2. Write short notes on:

- (a) Free radical and antioxidant
- (b) Phase II xenobiotic
- (e) Liver function test
  - (d) Turaer suppressor gene
  - ( ) Cardiac markers

3. Short answer questions (justify it).

(a) Blood creatinine more better investigation than urine creatinine.
 (b) Vitamin C act as Pro-oxidant in higher doses.

(c) Serum is better than plasma for biochemical investigation.

(d) Lambert-beer law used for biochemical parameter.

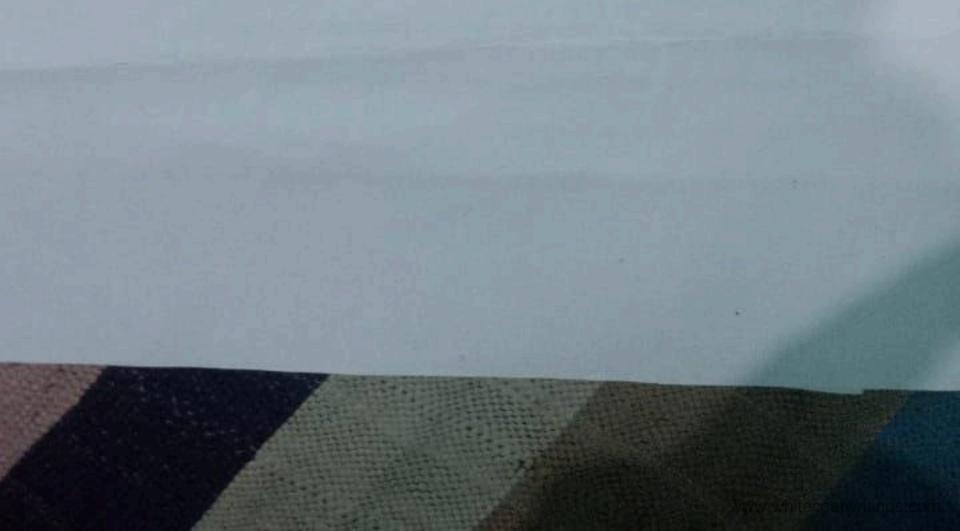
(e) Enumerate body fluid in our body.

### XXXXXXX

(5x3=15)

(4x5=20)

Marks: 50



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12			oll No
1	HRST PROFESSIONAL MJ	B.B.S. (ILSEMESTER) F	XAMINATION, 2016
1.1.		BIOCHEMISTRY	15m
•		PAPER-II	
E	ME - THREE HOURS		FULL MARKS: 50
	(Write your Roll No. at the top	immediately on the recei	pt of this Question Paper)
	NOTE: - USE SEPARAT	TE ANSWER BOOKS FO	REACH SECTION.
	NOTE: • USE SET ANA	Section-A	Marks: 25
			and management of
	1. How is uric acid synthesized in	our body? Discuss the ca	uses and manager 9
	hyperuricaemia.		(4x4=16)
	2. Write short notes on the follow	ving:	
	(a) Genetic code		AND A CONTRACTOR AND
	(b) Topoisomerase (c) lac operon		
	(d) Gene cloning		
	and any mention and and		Marks: 25
	A PART AND THE PAR	Section-B	
	<ol> <li>Name the principal minerals importance of Sodium and Po</li> <li>Classify hormones according</li> </ol>	which are macronutrients otassium in the body.	State the factors that regulate
2	<ol> <li>Classify hormones according hormone action.</li> </ol>	to men more	10.
	3. Write short notes on the follo	owing:	
	(a) Balanceu ulet		
1	(b) Carcinogens		
	(c) RIA Dan RDF	A DESCRIPTION	the start of the second
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	Roll	No	
		Examination, 2014	
First Professional M.B.B.S. (II S	Semester) Supplementary		
	Biochemistry		
	Paper-II	Full Marks: 50	
Time: - Three Hours			
(Line Senarate A	answer Books for Each Sec	ction.) ·	
(One acpairing of		Marks: 25	
	Section-A	1 2 100	
		(5x2=10)	
<ol> <li>Briefly discuss the following:         <ul> <li>(a) Classification, brief function</li> <li>(b) Lac-Operon theory of gene</li> </ul> </li> </ol>	ons and complete structure e expression and regulation		
		(5x2=10)	
<ol> <li>Describe briefly the following:         <ul> <li>(a) Process of DNA replicatio</li> <li>(b) Gout &amp; Orotic Aciduria.</li> </ul> </li> </ol>		in the field of	
3. Principle and technique of Polym	verase chain reaction and i	ts application in the neid of	
<ol> <li>Principle and technique of route medicine and biological science.</li> </ol>			
medicine and enougher		Marks: 25	
	Section-B		
4. Explain the various mechanisms	by which the body maint	ains its pH of blood. 10	
<ol><li>Explain the various mechanisms</li></ol>	, by man and y	(5x3=15)	
5. Explain in brief:		and the second se	
5. Explain in onen (a) SDA			
(b) Titrable Acidity			
n n n n n n n n n n n n n n n n n n n	station		
<ul> <li>(d) Detoxification of Action</li> </ul>	blottes		
(c) Plasma-proteins.			
a view and a second	XXXXXX		

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(3x5=15)

Marks: 25

role of different hormones that play a role in its regulation. Alami-(a) Muscle glycogen cannot contribute to blood glucose.

(b) Alcoholism leads to fatty liver.

3. Write briefly about: (a) Transport mechanism across the membrane

(b) Mucopolysaccharides

(c) Uncouplers,

2. Give explanations for:

TIME: - THREE HOURS

(d) Enzyme markers in myocardial infarction

- 1. Name the important products from tryptophan and briefly discuss the disorders of its metabolism.
- 2. Write the steps of cholesterol synthesis upto mevalonate and briefly describe the regulation of cholesterol synthesis.

Section-B

- 3. Write short notes on:
  - (a) Factors responsible for fluidity of cell membrane
  - (b) Rapoport Luebering Cycle BPG Shent
  - (c) Antioxidant Vitamins
  - (d) Fatty acid synthase complex
  - (e) Role of Vitamin-D in maintenance of blood calcium level

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# UG/MBBS/207(AB)

Roll No.

# FIRST PROFESSIONAL M.B.B.S. (II SEMESTER) EXAMINATION, 2016

# BIOCHEMISTRY

# PAPER-I

FULL MARKS: 50

(Write your Roll No. at the top immediately on the receipt of this Question Paper)

NOTE: - USE SEPARATE ANSWER BOOKS FOR EACH SECTION.

# Section-A

1. What is the normal blood glucose level in fasting and postprandial data? Explain the

Marks: 25

(2+7=9)

(2+2=4)

(4x3=12)

### UG/MBBS/207(AB)

Roll No. .....

FIRST PROFESSIONAL M.B.B.S. (II SEMESTER) EXAMINATION, 2015

## BIOCHEMISTRY

PAPER-I

TIME: - THREE HOURS

### FULL MARKS: 50

NOTE: - USE SEPARATE ANSWER BOOKS FOR EACH SECTION.

### Section-A

Marks: 25

(3x5=15)

-1. Define Gluconeogenesis. Describe about Glucose- alanine and Coricycle in relation to gluconeogenesis. What is VONGIERKE'S disease? (1+7+2=10)

- 2. Write short notes on:
  - (a) Substrate Shuttles.
  - [b] Functional & Non functional enzymes.
  - Allosteric inhibitions.
    - (d) Chemiosmotic Theory.as
    - (D)Glycemic Index of diety food.

### Section-B

X. Tyrosine has sparing action of phenyalanine. Briefly describe its metabolism and associated disorders.

2. Describe synthesis and oxidation of ketone bodies and discuss regulation of ketogenesis.

# 3. Write short notes on:

(a) Beri-beri

Lipotropic factors

- (e) Coenzymic role of vitamin B12 and folic acid.
- (d) Transamination and Deamination.
- (e) Fluid Mosaic Model of Biological membrane.

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Marks: 25

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(3x5=15)

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UGA	(BBS/211(AB)
First Professional M.B.B.S. (II Semester) (June) Examination	. 2013
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Doctormony	
Paper-1	Full Marks: 50
Fime: - Three Hours (Use Separate Answer Books for Each Section)	T an other of
	Marks: 25
Section-A	
1. Describe glycogeneis and glycogenolysis. How are they regulated?	(3+7=10)
2. Write notes on:	(3x5=15)
<ul> <li>(a) Inhibitors of electron transport chain.</li> <li>(b) Epimerism with suitable example.</li> <li>(c) Covalent modification of enzyme activity.</li> <li>(d) Fructose Intolerance.</li> <li>(e) Pyruvate Dehydrogenase.</li> </ul>	
Section-B	Marks: 25
	(1+5=6)
<ol> <li>(a) Name the ketone bodies. How are they formed and utilized?</li> <li>(b) Give two conditions characterized by excessive production of</li> </ol>	
(b) Give two conditions characteristic of	2
<ul> <li>4. (a) Describe the pathway for degradation of Phenylalanine.</li> <li>(b) Discuss the genetic disease associated with this pathway.</li> </ul>	5
(b) Discuss the genetic discase annumber	(2.5x4=10)
5. Write short notes on any four	
(a) Carnitine Shuttle (b) Transamination	
A Discharmical fold of vitamin of	
<ul> <li>(c) Eluid mosaic model.</li> <li>(f) Alkaptonuria.</li> </ul>	
(f) Arkaptor Transport. (g) Active Transport.	

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First Professional	Roll No. M.B.B.S. (II Semester) Examination, 2014	
	Biochemistry	
Time: - Three Hours	Paper-I	Marks: 50
Note: - Use Separate Answer Bo	* ett.	
	Section-A	Marks: 25
Define WHO Criteria for Diag blood sugar regulation in our l	gnosis of Diabetes mellitus. Describe briefly abody.	out the (2+8=10)
2. Write short note on: (a) Galactosemia (b) Isoenzymes (c) Couplers and Uncoupl (c) Mucopolysaccharides (c) Substrate level phosph		(3x5=15)
	Section-B	Marks: 25
What is beta-oxidation? Enun	nerate the pathway for fatty acid degradation.	(1+6=7)
4. Describe urca cycle. Discuss of	clinical significance of blood urea level.	(5+3-8)
5. Write short notes on any four Ta) Active transport. (b) Aromatic amino acid. (c) Maple Syrup Urine Di (d) Anti-oxidant vitamins. (e) Fatty Liver and Lipoto (f) Catecholamines. (e) Prostaglandins.	scase.	(2.5x4=10

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UG/MBBS/207(AB)

Roll No. .....

# FIRST PROFESSIONAL M.B.B.S. (II SEMESTER) EXAMINATION, 2015

#### BIOCHEMISTRY

#### PAPER-I

#### TIME: - THREE HOURS

### NOTE: - USE SEPARATE ANSWER BOOKS FOR EACH SECTION.

#### Section-A

A. Define Gluconeogenesis. Describe about Glucose- alanine and Coricycle in relation to (1+7+2=10)gluconeogenesis. What is VONGIERKE'S disease?

Write short notes on:
 Substrate Shuttles.
 Eunctional & Non functional enzymes.

(6) Allosteric inhibitions. (4) Chemiosmotic Theory. (D) Glycemic Index of diety food.

Section-B

Tyrosine has sparing action of phenyalanine. Briefly describe its metabolism and associated disorders.

2. Describe synthesis and oxidation of ketone bodies and discuss regulation of ketogenesis.

3. Write short notes on:

(a) Beri-beri (b) Lipotropic factors Coenzymic role of vitamin B12 and folic acid. Fransamination and Deamination. (e) Fluid Mosaic Model of Biological membrane.

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FULL MARKS: 50

# Marks: 25

(3x5=15)

Marks: 25

(3x5-15)

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#### SECTION ...

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## Paper Code- 4193 MBBS 1<sup>ST</sup> PROFESSIONAL EXAMINATION Subject-Biochemistry PUPERI

Maximum Marks: - 80 Time Allowed: Three Hours (Including 30 Minutes for MCQs) Section A & B should be answered in separate answer sheets provided. All questions are compulsory. Draw diagrams wherever necessary Note: Total Marks: 40 Section 1 21. Name the rate limiting step of cholesterol synthesis. Discuss the rate limiting step of cholesterol of synthesis along with its cost of cholesterol synthesis. synthesis along with its regulation. How is it catabolised to bile acids and bile salts? Enumerate the hormones derived from cholesterol. Explain role of cholesterol in atherosclerosis. (2+2+2+2+2=10 Marks) 4X5 Marks=20 O2. Short Notes a) Discuss the features of competitive enzyme inhibition. List two pharmacological applications of competitive inhibition. S Explain why G6PD deficient individuals are more prone to hemolysis and bacterial infections. Explain what is Rapoport-Leubering Shunt and its biochemical significance in RBC's. a) Explain why Ketone bodies can be used as an alternate source of fuel by the peripheral tissues Cut be for august for but not liver. 5X2 Marks=10 **O3.** Short Answer Questions (1) Explain the basis of hyperuricemia in Von Gierke's disease Why is there a difference in severity of symptoms between GALT and galactokinase deficiency (classical and non- classical galactosemia)? c) Ammonia detoxification in our body. dy Explain why aspartame containing artificial sweeteners should be avoided in patients of phenylketonuria. Vitamin C is synthesized in uronic acid pathway in lower animals but not in human beings. Why? Section B

#### **Total Marks: 40**

Of. A 40 year old man came to the OPD with complaints of anorexia, nausea and vomiting for the past 10 days. He gave history of passage of clay colour stools and dark urine. There was no history of fever or loose stools. Patient also had a history of episodic pain in right hypochondrium which relieved on its own after a few hours.) The laboratory findings are as follows:

(2+3+2+3=10)

30

Blood sugar 105mg% Total protein 7.0g%\_\_\_ Albumin 4.0g% \_ Urea 40 mg% / Creatinine 0.8mg%

Total Bilirubin 10mg% Direct Bilirubin 7mg% ALP 800 u/L > Hepotic SGOT 87u/L SGPT 92 u/1

Vin the given scenario, what is the type of Jaundice the patient has? What are the other types of Jaundice? (2)

- I. How is bilirubin formed and excreted from the body?
- M. What tests would you do in the patients' urine?

IV. In a tabular form, using liver function tests, differentiate between the different types of Jaundice.

(3)

(3)

#### UG/MBBS/267(AB)

Roll No.

# FIRST PROFESSION AL M B B S. (II SEMESTER) EXAMINATION, 2015

## BIOCHEMISTRY

PAPER-I

TIME + THREE HOURS

#### FULL MARKS: 50

NOTE: - USE SEPARATE ANSWER BOOKS FOR EACH SECTION.

#### Section-A

Marks: 25

(3x5-15)

-1. Define Gluconeogenesis. Describe about Glucose- alanine and Coricycle in relation to gluconcogenesis. What is VONGIERKE'S disease? (1+7+2-10)

## 2. Write short notes on:

(af Substrate Shuttles

[b] Functional & Non functional enzymes.

(C) Allosteric inhibitions.

(d) Chemiosmotic Theory as

(E) Glycemic Index of diety food.

#### Section-B

### Marks: 25

5

(3x5=15)

- A. Tyrosine has sparing action of phenyalanine. Briefly describe its metabolism and associated disorders.
- 2. Describe synthesis and oxidation of ketone bodies and discuss regulation of ketogenesis.

### 3. Write short notes on:

(al Beri-beri

Del ipotropic factors/

(e) Coenzymic role of vitamin Big and folic acid.

(d) Transamination and Deamination.

(c) Huid Mosaic Model of Biological membrane.

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FIRST PROFESSIONAL N	A.B.B.S. (II SEMESTER) EX	CAMINATION. 2012
	BIOCHEMISTRY	. 50
TIME: - THREE HOURS	PAPER-II	FULL MARKS: 50
NOTE: - USE SEPARA	TE ANSWER BOOKS FOR	REACH SECTION. Marks: 25
	Section-A	abibitors which
<ol> <li>Briefly describe the elongation may inhibit different steps. τ </li> </ol>	steps of protein synthesis as €, S	nd name the minimum $(5x^2=1)$
<ul> <li>2. Briefly discuss the following:</li> <li>(a) Post transcriptional mod</li> <li>(b) Structure and function of</li> </ul>	difications. of IgG and IgM.	(5x2=
3. Describe briefly the following: (a) RFLP and its importance (b) Telomerase activity.	e. Repeteto de C	Lupapantas
		Mark
	Section-B	1 Com
1. Define Xenobicts. How are the	ey detoxified?	7
2 Define trace elements. What an	re the roles of iron and co	opper in our body? Mainone
disease associated with each of	f them.	io
3. Write short notes on the follow	ving:	
(a) Obesity (b) Hormonal action through	gh nuclear receptors.	
(c) ELISA		
	XXXXXX	

First Professional M.B.B.S. (II Semester) Examination, 2014

# Biochemistry

## Paper-I

Time: - Three Hours

Full Marks: 50

Note: - Use Separate Answer Books for Each Section.

# Section-A

Marks: 25

- Define WHO Criteria for Diagnosis of Diabetes mellitus. Describe briefly about the blood sugar regulation in our body. (2+8=10)
- (3x5=15) 2. Write short note on: Galactosemia (b) soenzymes C Couplers and Uncouples for E.T.C. (d) Mucopolysaccharides
  - (c) Substrate level phosphorylation (SLP).

#### Marks: 25 Section-B

. What is beta-oxidation? Enumerate the pathway for fatty acid degradation. (1+6=7)4. Describe urea cycle. Discuss clinical significance of blood urea level. (5+3=8)(2.5x4=10)5. Write short notes on any four: Ta) Active transport. Aromatic amino acid. Maple Syrup Urine Disease. (d) Anti-oxidant vitamins. ( Fatty Liver and Lipotropic Factors. (f) Catecholamines. Prostaglandins.

## XXXXXX

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	SECTION -	
15	Des un de l'instit au l'entreis & de important	
2)	Wine start will an	
	a) fadrout free of activi-Co-A by Con's cycle	
	3) Describe Weißy:	
	a) Transport across cell merchrane	
-	<ul> <li>S) Change transporters</li> <li>C) Waters Crick model of DNA &amp; Z DEO</li> </ul>	

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# UG/MBBS/207(AB) Roll No. ...(SISSME006

### FIRST PROFESSIONAL M.B.B.S. (II SEMESTER) EXAMINATION, 2016

#### BIOCHEMISTRY

#### PAPER-I

FULL MARKS: 50

(Write your Roll No. at the top immediately on the receipt of this Question Paper)

#### NOTE: - USE SEPARATE ANSWER BOOKS FOR EACH SECTION.

#### Section-A

Marks: 25

(2+2=4)

(4x3-12)

What is the normal blood glucose level in fasting and postprandial data? Explain the role of different hormones that play a role in its regulation. (2+7=9)

2. Give explanations for:
(a) Muscle glycogen cannot contribute to blood glucose.
(b) Alcoholism leads to fatty liver.
3. Write briefly about:

3. Write briefly about: (a) Transport mechanism across the membrane (b) Mucopolysaccharides (c) Uncouplers (c) Uncouplers (c) Uncouplers

TIME: - THREE HOURS

(d) Enzyme markers in myocardial infarction

#### Section-B

7. Name the important products from tryptophan and briefly discuss the disorders of its metabolism. 5

2/Write the steps of cholesterol synthesis upto mevalonate and briefly describe the regulation of cholesterol synthesis.

3. Write short notes on:
(a) Factors responsible for fluidity of cell membrane
(b) Rapoport Luebering Cycle
(c) Antioxidant Vitamins
(d) Fatty acid synthase complex
(c) Role of Vitamin-D in maintenance of blood calcium level

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(3x5=15)

appendix on the

Roll No. TISSHEDGI

FIRST PROFESSIONAL M.B.B.S. (II SEMESTER) EXAMINATION, 2015

#### BIOCHEMISTRY

#### PAPER-I

# TIME: - THREE HOURS

NOTE: - USE SEPARATE ANSWER BOOKS FOR EACH SECTION.

#### Section-A

1. Define Gluconeogenesis. Describe about Glucose- alanine and Coricycle in relation to gluconeogenesis. What is VONGIERKE'S disease? (1+7+2=10)

2. Write short notes on:

(a) Substrate Shuttles.

(b) Functional & Non functional enzymes.

(c) Allosteric inhibitions.

(d) Chemiosmotic Theory.

(e) Glycemic Index of diety food.

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#### Section-B

1. Tyrosine has sparing action of phenyala	anine. Briefly describe its metabolism and
associated disorders.	

- 2. Describe synthesis and oxidation of ketone bodies and discuss regulation of ketogenesis.
- 3. Write short notes on:
  - (a) Beri-beri
    - (b) Lipotropic factors
    - (c) Coenzymic role of vitamin B<sub>12</sub> and folic acid.

(d) Transamination and Deamination.

(e) Fluid Mosaic Model of Biological membrane.

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(3x5=15)

Marks: 25

Marks: 25

FULL MARKS: 50

(3x5=15)

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UG/MBBS/207(AB)

2 ...

Roll No.

## FIRST PROFESSIONAL M.B.B.S. (II SEMESTER) EXAMINATION, 2018

#### BIOCHEMISTRY

#### PAPER-I

FULL MARKS: 50

(Write your Roll No. at the top immediately on the receipt of this Question Paper)

NOTE: - USE SEPARATE ANSWER BOOKS FOR EACH SECTION.

#### Section-A

- 1. Describe glycogenesis. How are glycogenesis and glycogenolysis reciprocally regulated? Discuss the reason behind hyperuricemia in Glucose- 6-phosphatase (4+4+2=10)deficiency.
- 2. Write short notes on:

TIME: - THREE HOURS

- (a) Mitochondria
- (b) TCA cycle is an amphibolic pathway.
- (c) Allosteric enzymes
- (d) Uncouplers
- (e) Hereditary lactose intolerance.

#### Section-B

- 1. Discuss why ketone bodies are synthesised only during fasting. Add a note on their synthesis and metabolism in our body.
- 2. Discuss the roles of various proteins found in human plasma. Enumerate three common 5 causes of hypoproteinemia and their manifestations.

3. Write short notes on:

- (a) Secondary active transport
- (b) Biochemical role of vitamin C, and their deficiency manifestations
- (c) Biochemical derangements in Phenylketonuria
- (d) Schilling's tests
- (e) Hartnup's disease.

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Shot on OnePlus Powered by Dual Camera

Marks: 25

Marks: 25

(5x3=15)

5

(5x3=15)

B)

# UG/MBBS/208(AB)

FULL MARKS: 50

Roll No. 15155ME DO

### FIRST PROFESSIONAL M.B.B.S. (II SEMESTER) EXAMINATION, 2016

#### BIOCHEMISTRY

#### PAPER-II

#### TIME: - THREE HOURS

(Write your Roll No. at the top immediately on the receipt of this Question Paper)

## NOTE: - USE SEPARATE ANSWER BOOKS FOR EACH SECTION.

#### Section-A

Marks: 25

(4x4=16)

Marks: 25

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C 5 e U

. How is uric acid synthesized in our body? Discuss the causes and management of hyperuricaemia.

Section-B

2. Write short notes on the following: (a) Genetic code (b) Topoisomerase (e) lac operon (d) Gene cloning Break of Drip

Reune Return ray

200 Name the principal minerals which are macronutrients. State the biochemical importance of Sodium and Potassium in the body.

Z. Classify hormones according to their mode of action. State the factors that regulate hormone action.

3. Write short notes on the following: (a) Balanced diet (b) Carcinogens Je RIA

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TIME: - THREE HOURS	PAPER-II	FULL MARKS: 50
NOTE: - USE SEPARATE A	ANSWER BOOKS FO	R EACH SECTION.
	Section-A	Marks: 25
X. Briefly describe the elongation step may inhibit different steps.	os of protein synthesis a	and name the inhibitors which 5
		(5x2=10)
<ol> <li>Briefly discuss the following:         <ul> <li>(a) Post transcriptional modific</li> <li>(b) Structure and function of Ig</li> </ul> </li> </ol>	ations. G and IgM.	
		(5x2=10)
<ol> <li>Describe briefly the following:</li> <li>(a) RFLP and its importance.</li> <li>(b) Telomerase activity.</li> </ol>		
	Section-B	Marks: 25
1. Define Xenobicts. How are they do	etoxified?	8
2. Define trace elements. What are the disease associated with each of the	e roles of iron an <u>d go</u> m.	pper in our body? Mention one
3. Write short notes on the following		i
(a) Obesity (b) Hormonal action through n		

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# BIOCHEMISTRY

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# FIRST PROFESSIONAL M.B.B.S. (II SEMESTER) EXAMINATION, 2015

Roll No. ....

## UG/MBBS/208(AB)

The tratessional M.B.B.S. (II Semester) Lyamination, 2014

Biochemistry

Time: - Three Hours

# Paper-I

Full Marks: 50

Marks: 25

Note: - Use Separate Answer Books for Each Section.

Aromatic amino acid.

(d) Anti-oxidant vitamins.

(O Catecholamines. Prostaglandins.

Sec. 1

(Maple Syrup Urine Disease.

(c) Fatty Liver and Lipotropic Factors.

### Section-A Marks: 25 Define WHO Criteria for Diagnosis of Diabetes mellitus. Describe briefly about the blood sugar regulation in our body. (2+8=10)

(3x5=15) 2. Write short note on: Galactosemia (b) soenzymes . C Couplers and Uncouples for E.T.C. (d) Mucopolysaccharides (c) Substrate level phosphorylation (SLP).

## Section-B

(1+6=7) 3. What is beta-oxidation? Enumerate the pathway for fatty acid degradation. (5+3=8) 4. Describe urea cycle. Discuss clinical significance of blood urea level. (2.5x4=10) 5. Write short notes on any four: Ta) Active transport.

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Braw the p.		UG/MBBS/212(A)
	M.B.B.S. (II Semester) (June) I	xamination, 2013
First Professional	Biochemistry	
	Paper-II	Full Marks: 50
Time: - Three Hours (Use Se	parate Answer Books for Each	Section) Marks: 25
	Section-A	
1. Explain the breakdown of purit	ne nucleotides. Discuss in brief the d	liseases associated with the (4+4=8)
2. What is a codon? Describe the		5 (3x4-12)
3. Write brielly about: (i) Oncosuppressor Gene. (ii) IgE		(324-12)
(int+11SA) (iv) Post-transcriptional N		Marks: 25
	Section-B	
<ol> <li>Describe the sources, dail deficiency manifestations</li> </ol>	ly requirement, absorption, bio s of Iron.	chemical functions and 10
		(3x5=15)
<ol> <li>5. Write short notes on: -         <ul> <li>(a) Phase Two (II) De</li> <li>(b) Mechanism of ins</li> </ul> </li> </ol>	etoxification. sulin action (only schematic di	agram).

(c) Oncogene & Protooncogene.

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Einst Prof.	Roll N. B.B.S. (IL Servester) Examination	LIGANBBS 207(AB)		
	Roll M.B.B.S. CILC Roll No	0	Roll No Eins Professional M.R.B.S. (1) Semanter (Examination, 7)	014
	Citt Serbester) Examination	on. 2014	ABBS OF SERVICE AND	
Time	Biochemistry		Ein Profession and and and	
Time - Three Houry			Biochemistry	
Note: - Use c	Paper-1		Paper-11	Full Marks: 50
Separate Answer	D	Full Marks: 50		
Note: - Use Separate Answer	books for Each Section.		Time: - Three Hours	
1.0	5		Time: - Three Hours Note: - Use Separate Answer Bocks for Each Section-	Marks: 25
Define WHO Criterio	<u>Section-A</u> Agnosis of Diabates mellitus. Describe b r body.	Marks: 25	Note - Ose any-	
blood sugar regulation in	agnosis of Dishetes melling Describe h		Section: A 1. Briefly describe catabolism of Purine nucleotides and its metabolism incomese.	c and clinical 5
2. Write short note on:	body.	therity about the	to the catabolism of Purine nucleotides and the	
(a) Cal		- (2+8-10)	1. Brietly descent	
(a) Galactosemia (b) Isoenzymes		(Jas-15)	Mginter Constitution	2
		(545-15)	2. Briefly discuss the following: (a) Different classes of immunoglobulins and their functions (b) Different classes of immunoglobuling and their functions	,
(c) Couplers and Uncouple (d) Mucopolysaccharides (c) Subtration	a for E.T.C.	1		
(c) Substrate level phospho				man in the field of
- Incoluo	Chatton (SLP)		3. Describe briefly the following:	Struce in an 5
	Section-B		(a) Principle of Recommendation	
What is here	CECTION-N	Marks: 25	(b) Process of DNA replication in Prokaryotes.	Marks: 25
in is beta-oxidation? Enumer.	ate the pathway for fatty acid degradatio		Section-H	Maina
Describe urea curla Di	, the many acto degradatio	m (1+6-7)		5
Describe urea cycle. Discuss clini	cal significance of blood urea lowel		4. Explain the regulation of water balance.	
		(5+3=8)	4. Explain the regulation of the second all	
			5. Describe the role of kidney in maintenance of blood pH.	Gx5=
		(2.5x4=10)		(3X)-
	/		6. Write shot notes on:	
			(a) Anti-oncogenes.	
(e) Fatty Liver and Lipotropic Fat (f) Catecholamines,	stor.	100 m 1 m 2 m	(b) Electrophoresis. (c) Role of albumin in blood.	
(g) Prostaglanding		1000		
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Department of Biochemistry Question paper Test no-1(15.10.08) Eatch 2008

ttempt all Questions and try to do them in serial order-Max. Marks- 50 1. Write short notes on -10 (a) Ribesomes (b) Lactose Intolerance (c) Bile Salts (d) Role of saliva in diastion (e) Endopeptidases in digestion 2. Describe briefly about-10 T(a) DNA organization (b) Gangliosides

- (\*) Fluid Micsaic Model of Cell Membrane
- (d) EFA
- (e) Eicosanoids
- 3. (a) Explain the structural organization of hemoglobin molecule. How does the aming acid sequence affect the properties of hemoglobin? 71-(b) Write a chart note on D maturation of proteins. 3.

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Write Breifly on -4.

- (a) Structural differences between s arch and glycogen
- (b) Allosteric Enzym: 3
- (c) Cymogen Activation

#### 5. Define-

- (a) Km
- (b) Active site
- (c) Anomer (d) Isozyme
- (:) Epimer

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### Department of Biochemistry Institute of Medical Sciences Banaras Hindu University

2<sup>nd</sup> Terminal MBB5 Examination 2017 Biochemistry (Theory)

Time: Three hours (9 AM -12 Noon)

Date: 19.08.2017 Maximum Marks: 50

- 1 / - 11x

Paper II Attempt all the questions in serial order

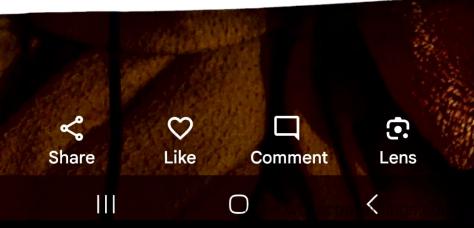
#### Section A

لى	Give a flow chart of uric acid biosynthesis. Jive the mechanism of action of	hypouricemic 3+2	
2/	drugs. Enumerate the functions of different DNA polymerases in Prokaryotes. How	are they	
4	different from eukaryotic DNA polymerases? Taq polymerase used for PCR	s modified -	
	justify.	2+2+1	
3.	Discuss the pose transcriptional medications of mRNA.	5	
	Write short notes on: a) Cell mediated immunity (CMI)	5×2	1:01

#### Section B

1.	What is signal transduction? What is its significance in biochemical	reactions? Draw a
	schematic diagram of insulin signalling.	1+3+3
2.	Describe the role of kidney in the maintenance of body pH.	5
3.		3+3+3+4
	Write short notes on: a). Protein energy malnutrition (PEM) → 100000000000000000000000000000000000	
	b) G protein coupled receptor (GPCR) *	

- c) ELISA
- d) Hormones regulating body fluid levels



2" Terminal MBB5 Feamination 2017 Biochemistry (Theory)

Time: Three hours (9 AM -12 Noon)

Date 18.08 1011 Maximum Marks 50

114

511

Paperl Attempt all the questions in serial order

#### Section A

with other Describe schematically the components of electron transport chain and its interfaces What are the physiological uncouplars? 1.11 . Describe various factors that affect velocity of enzyme action. What is Kin value in enzyme studies? Mention the effect of different inhibitors on Km value of the enzyme. 25251

3. Write short notes on

Sa) Glucose transportos

d) One carbon metabolism

Ipotropic factors

b) Regulation of glycalysis

Sorbitol pathway

. Futile cycles

4. Give repsons:

RBC have Rapaport Leubring pathway instead of glycolysis

Fats burn in the flame of carbohydrate

Slucagon has no effect on muscle glycogen

#### Section D

What is CPI#ing? Describe the synthesis and regulation of cholesterol in our body. 1+6+2 2. Write short notes on: 4.4.5.6.5 Transdeamination of Ppenylketonurla sal statain deficiency manifestations of Thiandin, Riboflavin



And Terminal MBBS Examination 2016 Biochemistry (Theory)

Time: Three hours Maximum Marks: 50

Date: 30.08.2016

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Code. c.d.

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Attempt all the questions PartA (5X5M=25M)

- 1. What are the sources of carbon and nitrogen atoms in purifie and pyrimidine ring? How
- is PRPP synthesized? Discuss the role of PRPP in the biosynthesis of purine and -- pyrimildine.
- 2. Discuss the components of innate and adaptive immune response.
- 3. Discuss the roles of different enzymes In DNA replication. How does telomere protect -Sar Par mere
- the ends of eukaryotic chromosomes?
- 4. Discuss, the initiation of translation in both prokaryotes and eukaryotes. How do different antibiotics inhibit translation? - tr (c.) \$2. (c.) \*
- 5/ Write a short note on genetic code. What is wobble hypothesis? Explain with example. Leuche

Part B

Sequentin 02 (3:XSM=15M)

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· 문서화 환화 문니

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1. Define Macrominerals and give examples. Describe briefly about calcium and phosphate (2+4+4=10 M) metabolism and its regulation.

1 AREAS

- 2, Write short note on (Any three)
- a) Folate trap-
- b) Phase 2 Xenoblotic Metabolism
- c) G Protein coupled Receptor mechanism ) Mechanism of Oncogenesis.

	6
AKSHAY KADAM	- Section -
Department of Biochemistry Institute of Medical Sciences Banaras Hindu University	
1 <sup>11</sup> Terminal MB 35 Examination 2017 Biochemistry (Theory) Time: Three hours Maximum Mari	
Attempt all the questions	
Define gluconeogenesis. Explain the Importance of the pathway and its regulation	
2 Classify amino acids. Explain zwitterions Discuss the role of sulfur containing ami	no acids
in stabilization of protein structure. 3. Write briefly about:	5x5= 25
المنافعة المنافع منافعة المنافعة المن منافعة المنافعة ا	x2.545
Section B	
Explain reversible and irreversible enzyme inhibition with suitable examples? Des role of enzymes and isoenzyme estimations in clinical diagnosis.	cribe the 10
Describe the sources of carbon and nitrogen atoms of purine and pyrimidine ring: the role and clinical significance of PRPP in purine and pyrimidine metabolism.	s. Explain 10
3/ Write briefly about:	5×2=10
Lactose Intolerance and Cystic Fibrosis	2
Differentiate between oleic acid and elaideic acid; Glycerophospholipid and     Sphingophospholipid	(5)
Specificity of enzyme action with example	ے ای
Draw labeled diagram of mitochondria .What is the difference between eukary prokaryotic cell?	otic and
これでClassify hyperuricemia. Mention normal values of serum uric acid. イ きょう うけ 「なっ」 うなる	•• G



1\* Terminal MBBS Examination 2016 **Biochemistry** (Theory)

**Time: Three hours** Maximum Marks: 50

#### Attempt all the questions

Part A

Explain the metabolism and biochemical effects of alcohol in acute and chronic Q1) CNS all bods (9M)

conditions.

Q 2) Explain the use of

a) Anaplerotic Reaction

b) HMP shunt pathway

Q 3) Write short notes on-

(3X4M=12M)

(2X2M=4M)

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Date: 29.08.2016

liver

- a) Enzyme profile in liver disease
- b) Fluid Mosaic Model of Biomembrane
- c) GTT ' Inter the
- d) Glycolysis in RBC

#### Part B

Q 1) . Explain how amino nitrogen of amino acids is removed as NH,? What are the fates of ammonia in the body? Describe Urea cycle and its related disorders. (2+2+6 = 10M) (3 X5M=15M)

- Q 2) Write short note on
  - a. Write in brief synthesis and Explain peripheral utilization of ketone bodies.
  - b. Draw labelled diagram of lipoprotein. Mention the names of lipoproteins with - Concility + their functions.
  - c. What are different buffer systems in human body. Write in brief the role of blood buffers in acid-base balance.

1" Terminal MBBS Examination 2019 **Biochemistry (Theory)** 

**Time: Three hours** 

Date: 19.01.2019 Maximum Marks: 90

Attempt all the questions

#### Section A

What are the different fates of Glucose 6 phosphate? Discuss both the phases of HMP v 2+5+3 shunt. Explain primaquine induced hemolysis.

2. Describe briefly about  $\alpha$ - helix and  $\beta$ - pleated sheets? Discuss the forces stabilizing protein Structure. What is the cause of Alzheimer's disease?

3. Write briefly about:

·····s a}∕ pH, pKa, pl

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b) Fructose 2, 6 bisphosphate Warburg effect Gluconeogenic substances

e) Heteropolysaccharides

#### Section B

- 1. Discuss the reactions in beta oxidation of fatty acids. Enumerate number of ATPs generated from complete oxidation of one molecule of palmitic acid. 10
- 2. Define enzymes. Classify enzymes. Briefly discuss the specificity of enzyme action with 2+5+3 example.

5×5=25

3. Write briefly about:

- a) Structure and classification of phospholipids b) Mitochondria
  - c) Transport across the cell membrane
- d) Examples and significance of omega-3 fatty acids
  - e) Structure and functions of cholesterol



5X5= 25

2<sup>nd</sup> Terminal MBBS Examination 2018 Biochemistry (Theory) Paper II

Time: Three hours

Date: 10.07.2018

Maximum Marks: 50

Attempt all the questions

#### Section A

1. How is DNA packed within nucleus? Discuss the DNA repair mechanisms. What 3+4+3 are the biological roles of DNA?

2. Write short notes on:

- a) Post translational modifications
- b) Structure of immunoglobulins
- c) Mechanism of regulation of gene expression in eukaryotes
- d) Codon

RFLA

#### Section B

- 1. Draw labeled diagram of G protein coupled receptor. Describe signaling of GPCR-cAMP pathway. Name two hormones which act through this signaling 3+3+2 pathway.
- 2. Describe body mechanisms that regulate pH homeostasis. Discuss acidosis and alkalosis in brief.

3+3+4

- 3. Write short notes on:
  - a) Oncogenes
  - b) ELISA
  - c) Xenobiotics



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3X5

#### 2<sup>nd</sup> Terminal MBBS Examination 2018 Biochemistry (Theory) Paper I

Time: Three hours

Date: 09.07.2018

Maximum Marks: 50

#### Attempt all the questions

#### Section A

- 1. Define enzymes, isoenzymes, and coenzymes with examples of each. Describe the role of different enzymes in Clinical diagnosis of <u>Myocardial infarction</u> with illustration. 3+4
- 2. Trace the pathway for the synthesis of glucose from alanine. Discuss the significance and regulation of the pathway. 4+4
- 3. Write briefly about:
  - a) Entry of NADH from cytosol to mitochondria
  - b) Abnormalities of digestion in cystic fibrosis
  - d) Use of SGLT2 inhibitors in the treatment of diabetes mellitus

#### Section B

- 1. Enumerate metabolic products derive from tyrosine and tryptophan. Describe the biosynthesis of epinephirine and norepinephrine. What is tyrosinosis? 2+4+2
- 2 Describe fatty acid synthase complex along with the function. Discuss the reciprocal regulation of fatty acid biosynthesis and β oxidation. 4+3
- 3. Write short notes on:
  - a) Protein degradation
  - b) Vitamin K
  - c) Prostglandins



0

Shot on OnePlus Powered by Dual Camera 3+3+4

4+3+3

19 Terminal MBBS Examination 2016 **Biochemistry** (Theory)

**Time: Three hours** Maximum Marks: 50

Date: 29.08.2016

(2X2M=4M)

(3X4M=12M)

(2+2+6 = 10M)

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ALC: N

#### Attempt all the questions Part A

Q1) Explain the metabolism and biochemical effects of alcohol in acute and chronic conditions. (9M)

- Q 2) Explain the use of
  - a) Anaplerotic Reaction
  - b) HMP shunt pathway
- Write short notes on-Q 3)
  - a) Enzyme profile in liver disease
  - b) Fluid Mosaic Model of Biomembrane
  - c) GTT
  - d) Glycolysis in RBC

#### Part B

- Explain how amino nitrogen of amino acids is removed as NH,? What are the fates Q1) of ammonia in the body? Describe Urea cycle and its related disorders.
- Q 2) Write short note on
  - (3 X5M=15M) a. Write in brief synthesis and Explain peripheral utilization of ketone bodies.
  - b. Draw labelled diagram of lipoprotein. Mention the names of lipoproteins with
  - c. What are different buffer systems in human body. Write in brief the role of blood

## 2<sup>nd</sup> Sessional MBBS Examination June 2014

Paper 1

Total marks: 50

Time : 3 hrs

#### Section- A

Q.1 Outline the sequence of reactions involved in the breakdown of glycogen in the skeletal muscles. Explain the purpose served by this process.	10
Q.2 What are the different mechanism of controlling the enzyme action? Explain with examples.	10
Q.3 Enumerate the salient feature of active transport.	5
Section – B	
Q.1 Classify lipoproteins. Explain their biological significance.	10
Q.2 Explain the role of bile salts in the digestion of and absorption of dietary lipids. Mention the change in observed in obstructive jaundice.	e 10
Q.3 Describe briefly about the fluid mosaic model of biomembranes.	5

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Q.1 Describe the reaction catalysed by ALT (SGPT) and AST (SGOT). What is the significance of their serum level in clinical diagnosis? -5 m - 5

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the

Q.2 Describe prokaryotic translation. How does it differ from eukaryotic translation? 10 A. S

O.3 Answer in brief on:

- A Topoisomerase
- B. Role of mitochondria in urea cycle
- C. Chromatin remodelling complex -
- D. Gene cloning

#### Section-B

Q.1 Describe the hormonal control of fluid and electrolyte homeostasis.

Q.2 Write short note on:-

- A. Tumour marker
- B. Alkali reserve

Q.3 Describe the role of vitamins in post translational modification.

Q.4 Give a schematic diagram of E.T.C. and describe the physiological uncoupler and inhibitors of E.T.C.

Q.5 Define xenobiotics. Describe briefly about phase I and phase II reactions of xenobiotics.5

5.

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5

5

4x2.5=10

2x2.5

1\* Terminal MBBS Examination 2016 Biochemistry (Theory)

Time: Three hours Maximum Marks: 50

. Date: 30.08.2016

10-1

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int D

Attempt all the questions Part A (5X5M=25M)

- What are the sources of carbon and nitrogen atoms in purifie and pyrimidine ring? How is PRPP synthesized? Discuss the role of PRPP in the biosynthesis of purifie and pyrimidine.
- 2. Discuss the components of innate and adaptive immune response.
- 3. Discuss the roles of different enzymes in DNA replication. How does telomere protect the ends of eukaryotic chromosomes?
- 4. Discuss, the initiation of translation in both prokaryotes and eukaryotes. How do different antibiotics inhibit translation?
- 5. Write a short note on genetic code. What is wobble hypothesis? Explain with example.

## Leucine

Sequestical

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 Define Macrominerals and give examples. Describe briefly about calcium and phosphate metabolism and its regulation. (2+4+4=10 M)

Part B

Write short note on (Any three) 2.

- a) Folate trap
- b) Phase 2 Xenobiotic Metabolism
- c) G Protein coupled Receptor mechanism
- d) Mechanism of Oncogenesis.

(3:X5M=15M)

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1<sup>st</sup> Terminal MBBS Examination 2016 **Biochemistry** (Theory)

rime: Three hours

Date: 14.03.2016 Maximum Marks: 100

15

5X5= 25

#### Attempt all the questions

- 1. Explain the hexose monophosphate pathway and its importance in various tissues. Discuss 15 the various applied aspects of this pathway.
- 2. What are the metabolic products derived from tyrosine and tryptophan? Discuss the 15 pathway of phenylalanine metabolism. Mention the defects associated with it.
- 3. Define primary and secondary bile acids with example. Discuss enterohepatic circulation 15 of bile with its clinical significance.
- 4. Discuss the role of different body buffers along with lungs and kidneys in maintenance of 15 normal pH.
- 5. Define enzyme, coenzyme and isoenzyme with example. Discuss diagnostic roles of enzymes with special reference to isoenzymes.

6. Write briefly about:

- a) Fructose Metabolism
- b) Structure and functions of mitochondria
- c) Phospholipidis and their applications
- d) Tertiary structure of proteins
- e) Alcohol Metabolism

#### FIRST TERMINAL EXAMINATION DECEMBER 2011 BIOCHEMISTRY

#### WRITE SECTION A AND SECTION B IN SEPARATE ANSWER BOOKS.

Time: 3 Hours

Maximum Marks 50

#### SECTION A

1. What are the different types of enzyme inhibition? Explain with suitable	5
examples.	
2 How glucose is utilized by the cell in absence of oxygen?	5
3. Write short notes on.	5X3=15
(a) Importance of uronic acid pathways	
control that have a second and the second	

(b) Digestion and absorption of protein in body

(c) Salvage pathways of purine metabolism

#### SECTION B

4. State the sources of ammonia in body. Why is am	monia toxic? What steps has	
organism adapted to reduced ammonia toxicity?	~	10
5. Write short note on.		5
(a) S-adenosyl methionine (SAM)		

1 (b) Nucleosomes

6. Enumerate structures containing C.P.P. ring. Describe synthesis of cholesterol and its regulation in our body?

### 1<sup>st</sup> Terminal MBBS Examination 2016 Biochemistry (Theory)

Time: Three hours

Date: 14.03.2016 Maximum Marks: 100

Attempt all the questions

1-18

- 1. Explain the hexose monophosphate pathway and its importance in various tissues. Discuss the various applied aspects of this pathway. 15
- 2. What are the metabolic products derived from tyrosine and tryptophan? Discuss the pathway of phenylalanine metabolism. Mention the defects associated with it. 15
- 3. Define primary and secondary bile acids with example. Discuss enterohepatic circulation of bile with its clinical significance.
- Discuss the role of different body buffers along with lungs and kidneys in maintenance of normal pH.
- 5. Define enzyme, coenzyme and isoenzyme with example. Discuss diagnostic roles of enzymes with special reference to isoenzymes. 15
- 6. Write briefly about:
  - a) Fructose Metabolism
  - b) Structure and functions of mitochondria
  - c) Phospholipidis and their applications
  - d) Tertiary structure of proteins
  - e) Alcohol Metabolism

5X5= 25

6

1<sup>st</sup> Terminal MBBS Examination 2015 Biochemistry (Theory)

Attempt	tall	the	qui	Peti	

	questions	
		aximum Marks- 100
10	How is fructose synthesised in our body? Explain the clinica athway.	I significance of this
/ 2.	Draws can	10
sy	Draw a CPP ring. Describe steps of synthesis of cholesterol.	How is cholesterol
		15
3.	Describe briefly on -	
	Va. Transamination and its	10
	<ul> <li>Transamination and its metabolic importance.</li> </ul>	
	Discuss the interrelation between urea cycle and TC	A cycle
4.		
	Justify the following statements-	15
	<ul> <li>Haemoglobin is a better C<sub>2</sub> carrier in blood than myc</li> <li>1,25 DHCC as hormone in human body</li> </ul>	globin
	- Von Gierkes Disease lead to gout	
	d. Blood sample for glucose estimation is collected in a	
	e. LDL cholesterol is bad.	donde viais.
	f. G6PD is a preferred genetic disorder.	
5. W	rite differences between	
		10
A.	Glucokinase and Hexokinase	
. b.	Competitive Inhibition and Suicidal Inhibition	1
6.Write	e short notes on-	30
	1 Province and Province	
	A. Reciprocal Regulation	
	Ap. Secondary structure of proteins	

c, Galactosemia

d. Transport of lipids in blood

e. Lipotropic Factors

A. Iso-electric pH

7, Explain briefly the digestion and absorption of proteins in our body.

## 2nd Sessional MBBS Examination June 2014

#### Paper 1

3 hrs Time

Total marks: 50

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#### Section- A

the second the second	eleta.
Q.1 Outline the sequence of reactions involved in the breakdown of glycogen in the sk	10
O.2 What are the different mechanism of controlling the enzyme action? Explain with	5

Q.3 Enumerate the salient feature of active transport.

#### Section - B

Q.1 Classify lipoproteins. Explain their biological significance.

Q.2 Explain the role of bile salts in the digestion of and absorption of dietary lipids. Mention the change in observed in obstructive jaundice.

Q.3 Describe briefly about the fluid mosaic model of biomembranes.

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# BIOCHEMISTRY

Paper No. - II

Ma.

## lime : Three hours

NOTE : USE SEPARATE ANSWERBOOK FOR EACH SECTION.

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an

	SECTION - A	(Marks
¥.	What are the genetic code? Discuss their properties?	5
Ľ	Write briefly the salient feature of 'Lac Operon' and its regulation?	5
x.	Describe the structure of Immunoglobulins? Mention the various class immunoglobulins and their uses?	ses of 5
×.	What are the different types of Blot hybridization? Describe the methods Blot hybridization?	h
5.	Describe the mechanism of regulation of transcription in procaryotes eukaryotes? Active motor , Rampin, domention	
er J	What are macrominerals? Describe about Calcium and phosphorus r in our body. How it is regulated? Define BIOTRANSFORMATION. Describe briefly various phases of	9
~	occur in our body.	8
3	Write short notes on : Minamata disease(H1) Jepan, D1 Anion Gap Ref value Ref of fords	2×4=8 essor Genes
KUX	anie anie anie anie gwennenie nie gwennenie nie	

30

#### 1" Terminal MBBS Examination 2015 Biochemistry (Theory)

Attempt all the questions	Maximum Marks- 100
1. How is fructose synthesised in our body? Explain the clil	nical significance of this
pathway.	10
2. Draw a CPP ring. Describe steps of synthesis of cholester	rol. How is cholesterol
synthesis regulated?	15
3. Describe briefly on -	10
a. Transamination and its metabolic importance.	
b. Discuss the interrelation between urea cycle and	TCA cycle
4. Justify the following statements-	15
a. Haemoglobin is a better O2 carrier in blood than	myoglobin
b. 1,25 DHCC as hormone in human body	
c. Von Gierkes Disease lead to goul.	
d. Blood sample for glucose estimation is collected	in fluoride vials.
e. LDL cholesterol is bad.	
f. G6PD is a preferred genetic disorder.	
5. Write differences between	10
a. Glucokinase and Hexokinase	
a. Glucokinase and Helokinase	
b. Competitive Inhibition and Suicidal Inhibition	
6. Write short notes on-	30
a. Reciprocal Regulation	
b. Secondary structure of proteins	
c. Galactosemia	con propin painting of the
d. Transport of lipids in blood	
e. Lipotropic Factors	
f. Iso-electric pH	
7. Explain briefly the digestion and absorption of proteins in o	nur body. 10
and absorption of proteins in c	

1<sup>eff</sup> Terminal MBBS Examination 2016 Biochemistry (Theory)

Time: Three hours

Date: 14.03.2016 Maximum Marks: 100

#### Attempt all the questions

1. Explain the hexose monophosphate pathway and its importance in various tissues. Discuss the various applied aspects of this pathway. 15

1.20

- What are the metabolic products derived from tyrosine and tryptophan? Discuss the pathway of phenylalanine metabolism. Mention the defects associated with it.
- 3. Define primary and secondary bile acids with example. Discuss enterohepatic circulation of bile with its clinical significance.
- Discuss the role of different body buffers along with lungs and kidneys in maintenance of normal pH.
   15
- Define enzyme, coenzyme and isoenzyme with example. Discuss diagnostic roles of enzymes with special reference to isoenzymes.
- 6. Write briefly about:
  - a) Fructose Metabolism
  - b) Structure and functions of mitochondria
  - c) Phospholipidis and their applications
  - d) Tertiary structure of proteins
  - e) Alcohol Metabolism

5X5= 25

15

#### PIRST SESSIONAL EXAMINATION DECEMBER 2019

#### BIOCHEMISTRY, IMS, BHU

#### WRITE SECTION & AND SECTION HON SEPARATE ANSWER BOOKS

TIME THOURS

MAXIMUM MARKS: 50

- SECTION - A

(1) Deaw CPP ring. Name five biomolecules containing CPP ring. Describe basely regulation of obclasterol synthesis. 7

2) Write short notes or:

a) Mechanism of exzyme action

b) incorrymes & their climical significance

c) Apeliceptoten

1.31 Exercibe of the fullowing.

4X3-12

2X3-6

(a) Metalectum of phenylalarine & tynesico, what are the important biomolecules derived from systeme

br 1,25-DHCC

3.1\*

c) Metabolic role of S adenney? methiotics

#### SECTION B

1) Discuss the Unitie acid puthway & its importance.	7
2) Write show perces on:	JX2~ 6
<ul> <li>a) Enflectent fates of acetyl-Co-A</li> <li>b) Con's cycle</li> </ul>	
3) Describe briefly:	4X3=12

a) Transport across cell membrane

b) Gluccas transporters

T c) Watson Crick model of DNA & ZDNA

Department of Biochemistry Question paper Test no-1(15.10.08) Eatch 2008

tempt all Questions and try to do them in serial order-Max. Marks- 50 1. Write short notes on -

- - 10

N

- - (a) Ribesomes
  - (b) Lactose Intolerance
  - (c) Bile Salts
  - (d) Role of saliva in digation
  - (e) Endopeptidases in digation
- 2. Describe briefly about-
  - T(a) DNA organization (b) Gauglicsides
    - - (\*) Fluid Micsoie Model of Cell Membrane
    - (d) EFA
    - (e) Eicosanoids
- (a) Explain the structural organization of hemoglobin molecule. How does the amino acid 3. sequence affect the properties of hemoglobin? 71 (b) Write a short note on Denaturation of proteins. 3.

Write Breitly on -4.

- (a) Structural differences between s arch and glycogen
- (b) Allosteric Enzymes
- (c) Symogen Activation

#### 5. Define-

- (a) Km
- (b) Active site
- (c) Anomer
- (d) Isozyme
- (:) Epimer

Profin

pro-

10

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:

Department of Biochemistry Itempt all Questions and try to do them in serial order a discrete the formation of the series on -(a) Ribesomes (b) Lactose Intolerance (c) Bile Salts

Max. Mar

- - (d) Role of saliva in digestion'
  - (e) Endopeptidases in digestion
- Describe briefly about-2.
  - (a) DNA organization
  - (b) Gangliosides
  - Y(c) Fluid Mosaic Model of Cell Membrane
  - (d) EFA
  - (e) Eicosanoids
- 3. (a) Explain the structural organization of hemoglobin molecule. How does the sequence affect the properties of hemoglobin? (b) Write a short note on Denaturation of proteins,
- 4. Write Breifly on -
  - (a) Structural differences between starch and glycogen
  - (b) Allosteric Enzymes
  - (c) Zymogen Activation
- Define-5.
  - (a) Km
  - (b) Active site
  - (c) Anomer
  - (d) Isozyme
  - (e) Epimer

e: Three hours

2<sup>nd</sup> Terminal MBBS Examination 2015 **Biochemistry** (Theory) Paper I

Date: 27.07.2015

Maximum Marks: 50

10

Attempt all the questions

- Discuss the significance of enzymes in evaluation of myocardial 1.
- 2. Trace the pathway for the synthesis of glucose from alanine. Discuss the S significance and regulation of the pathway.
- 3. Write briefly about:
  - a) Peroxisome
  - b) Cyanide poisoning
  - c) Blood group substances
  - d) Fructose intolerance

#### Section B

- 1. Describe the mechanism of hormonal regulation of glycogen degradation. Discuss the effect of taking tea or coffee on glycogenolysis. 5
- 2. Describe the biosynthesis and utilization of ketone bodies. Discuss the conditions under which the above processes are increased. 5
- 3. Describe the various mechanisms for the removal of -NH2 group from amino acids. What is the fate of NH3 in kidney? 5
- 4. Describe the biochemical mechanism of vision. Discuss the role of vitamin A in vision and diseases associated with vitamin A deficiency. 19

#### TAMINATION, 2009 BIOCHEMISTRY Paper-I

Time: Three hours Use Separate answer book for each section.

(a)

**(b)** 

(b)

I

Full Marks: 50

1.) JUNE / JULY.

Section - A Marks - 25

Name glycogen storage diseases? Discuss briefly why a child suffering from von Clerke's disease is at the risk of suffering from severe hypoglycemia. (5)

Discuss in brief the effect of 2,4-dinitrophenol on oxidative phosphorylation. (4)

II Write short notes: (4x2=3) (a)

Rapaport - Leubering Shunt Pathway and its significance. Lactose Intolerance.

III Discuss briefly: (4x2=8)

- Role of lysosomes and any one disease related to their (a) function.
  - What do you understand by "competitive enzyme (b) inhibition"? Give examples of its therapeutic significance.

#### Section - B Marks - 25

- Describe how VITAMIN "D" is synthesized in body. Discuss the biochemical role of 1. VITAMIN "D" in CALCIUM HOMEOSTASIS. 4+5=9
- Describe & OXIDATION of FATTY ACIDS. Discuss the role of CARNITINE 2. TRANSPORTER system in its regulation.

6+2=8 V 2x4=8

- Write very briefly about any four:
  - HOMOCYSTINURIA LIPOTROPIC FACTOR (a) (b)

  - (c) SPHINGOMYELIN
  - **β PLEATED SHEET** (d)

HORMONE SENSITIVE LIPASE. (c)

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#### FIRST TERMINAL EXAMINATION DECEMBER 2011 BIOCHEMISTRY

## WRITE SECTION & AND SECTION & IN SEPARATE ANSWER BOOKS.

Time: 3 Hours

Maximum Marks 50

#### SECTION A

1. What are the different types of enzyme inhibition? Explain with suitable	5
cramples.	
2 How glucose is utilized by the cell in absence of exygen?	5
3. Write short notes on	5X3=15
(a) Importance of uronic usid pathways	

(b) Digestion and absorption of protein in body

(c) Salvage pathways of purine metabolism

#### SECTION B

4. State the sources of ammonia in body. Why is ammonia toxic? What steps has	
organism adapted to reduced ammonia toxicity?	10
5. Write short note on	5
(a) S-adenosyl methionine (SAM)	

1 (b) Nucleosomes

6 Enumerate structures containing C.P.P. ring. Describe synthesis of cholesterol and its regulation in our body? 10

## 2<sup>nd</sup> Sessional MBBS Examination June 2014

Paper 1

Total marks: 50

Time : 3 hirs

#### Section- A

Q.1 Outline the sequence of reactions involved in the breakdown of glycogen in the skeletal	
der odnine the sequence of reactions involved in the creation of the	10
muscles. Explain the purpose served by this process.	
Q.2 What are the different mechanism of controlling the enzyme action? Explain with exam	ples. 10
	5
Q.3 Enumerate the salient feature of active transport.	

#### Section - 8

Q.1 Classify lipoproteins. Explain their biological significance.	10
Q.2 Explain the role of bile salts in the digestion of and absorption of dietary lipids. Mention the change in observed in obstructive jaundice.	10
the second s	5

Q.3 Describe briefly about the fluid mosaic model of biomembranes.

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#### FIRST SESSIONAL EXAMINATION -DECEMBER2003 BIOCHEMISTRY #APER

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#### SECTION B

#### TIME 2HOURS

#### Max. Marks 25

3

#### Answer all Questions

1.	Describe	e carbohydrate present in milk. Write down its structure. it's digestion in GIT, metabolism, biosynthesis and ical defect in discuss associated with it.	5
2		the pathway for faity acid biosynthesis. Discuss it's 🤳	5
3.		the descarification of sormonia in human body.	
4.		the higher order folding of DNA in sukaryotes. Mention changes associated with various stages of cell growth	3
3.	Write she	ait note on.	8
	(i)	Classification of enzymes	
	(ii)	Conzyme, Cofactor and Prosthetic group -Define and give one example for each.	
	(111)	Mechanism of zymogen activation -	
	dias.	Provente debudennen and carbine complex Company	

 Pyruvate debydrogenase enzyme complex-Composition and function

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#### FIRST SESSIONAL EXAMINATION DECEMBER 2007 BIOCHUMISTRY-IMS BHU.

Write section A and Section B in SEPARATE ANSWER BOOKS.

These 3 Hours

Macimum Marin 50

5

5

5

#### Answer all Questions. SECTION A

1.	What are the different types of rozyner inhitetion? Explain with simulate	2
	ex unples.	
2.	What is Iso-enzyme? Give examples, What is their clinical significance?	3
3.	Write short notes on	5
	(a) Key enzymes of gluconcogenesis	
	(b) Glycogen storage disease	
3	What are the hormones influencing blood sugar level and how are these hormones	
*	ting?	5
5.	Write short notes on	5
	(a) Pyruvate dehydrogenuse complex (PDH)	
201	OsSignificance of H.M.P. Short pathway	
1	SECTION B	

6 Give brief description of the steps by which Ammonia is detaxified.

7. Wrac short note on.

(a)S-adenosyl methionine (SAM)

(b) Name of the important compounds formed from glycine

8. What is a Balance diet? How do you prepare a diet for a normal young adult male

performing minimum physical activity (Sedentary life style)

5

9. Write short note on

(a) Epotropic factors

(b) Sopie provisio Es sentral fatty Aux

10. Explant the steps of p-oxidation of palmitic acid, giving energetics

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#### ATION, 2009 JULY. BIOCHEMISTRY Paper-I

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(2)

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se Separate answer book for each section.

Full Marks: 50

## Section - A Marka - 25

Name glycogen storage diseases? Discuss briefly why a child suffering from von Gierke's disease is at the risk of suffering from severa hypoglycemia. (5)

**(b)** Discuss in brief the effect of 2,4-dinitrophenoi on oxidative phosphory!ation. (4)

- Write short notes: (4x2=3)
- ~ (a) Rapaport - Leubering Shunt Pathway and its significance.
  - (the Lactose Intolerance. .
- ш Discuss briefly: (4x2=8)
  - Role of lysosomes and any one disease related to their (a) function
  - What do you understand by "competitive enzyme (b) inhibition"? Give examples of its therapeutic significance. ~

#### Section - B Marks - 25

Describe how VITAMIN "D" is synthesized in body. Discuss the biochemical role of 1. VITAMIN "D" in CALCIUM HOMEOSTASIS. 4+5=9

Describe & - OXIDATION of FATTY ACIDS. Discuss the role of CARNITINE 2 TRANSPORTER system in its regulation.

6+2=8

2x4=8

- Write very briefly about any four: 3.
  - HOMOCYSTINURIA (a)
  - LIPOTROPIC FACTOR (b)
  - SPHINOOMYELIN (c)
  - **B PLEATED SHEET** (ď)
  - HORMONE SENSITIVE LIPASE. (c)

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FIRST SESSIONAL EXAMINATION JAN 2010 BIOCHEMISTRY WRITE SECTION & AND SECTION B ON SEPARATE ANSWER BOOKS MAXIMUM MARKS: 50 TAR 3 HOURS SECTION A (2) What do you mean by Isoenzymes? What is their clinical significance? 0 23 2) Write short note on: 2X5=10 a. Allosteric regulation 2 b. Glycosylated Hemoglobin 16 Phospholipase: types & function d Mucopolysaccharides 2 e Lactose intolerance V 4X2= 8 3) Describe of the following: a/ Secondary structure of protein / b, t RNA: Structure & function SECTION B 1) Describe how ATP can be generated anaerobically in the cells. Discuss its regulation, 10 2) Justify: Fats burn in the flame of carbohydrates / Hemoglobin & not myoglobin is the transporter of O2 Ammonia is highly toxic / LDL-cholesterol is bad cholesterol Ve. Uncontrolled Diabetes mellitus leads to acidosis. 7 A) Describe urea cycle. Discuss its relationship with citric acid pathway.

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#### First Sessional Examination December 2008 Biochemistry

Questions are Compulsory ite Section A & Section B on the Separate Answer Booklets ne: 3 Hours

Section-A

Maximum Marks: 5

5

Write short notes on:

a) Heteropolysaccharides

(b) Secondary Structure of Protein

Describe Briefly:

(a) Digestion & Absorption of Protein

(b) Fluid Mosaic Model of Cell Membrane

Describe the reaction carried out by the following enzymes & discuss the regulation of reaction catalyzed by them. 5

(a) Pyruvate Carboxylase

(b) Phosphofructokinase

Define Glycogenolysis. Explain the various reaction of Glycogenolysis & how it is regulated. Describe the replication of DNA. 5

#### Section -B

(A) Draw the structure and write one function of each of the following:

(i) Lecithin .

(ii) Gangliosides .

(B)-What is the importance of apolipoproteins in lipoproteins?

Explain with examples from lipid metabolism, the different mechanisms to control enzyme action.

What are non functional plasma enzymes? Write briefly about the enzymes that show variation is serum in myocardial infarction.

Write short notes on:

a) Prostaglandins

by Reverse cholesterol transport

er Nucleosomes

Ficom

Explain the effect of alcohol on the metabolic activities of the body.

19 Terminal MBBS Examination 2016 **Biochemistry (Theory)** 

Time: Three hours Maximum Marks: 50

Q1)

Date: 29.08.2016

#### Attempt all the questions

Part A

Explain the metabolism and blochemical effects of alcohol in acute and chronic conditions. (9M)

Q 21 Explain the use of

a) Anaplerotic Reaction

b) HMP shunt pathway

Q 31 Write short notes on-

a) Enzyme profile in liver disease

b) Fluid Mosaic Model of Biomembrane

c) GTT

d) Glycolysis in RBC

#### Part B

Explain now amino nitrogen of amino acids is removed as NH,? What are the fates Q1) of ammonia in the body? Describe Urea cycle and its related disorders. (2+2+6 = 10M)

Write short note on Q 21

(3 X5M=15M)

a. Write in brief synthesis and Explain peripheral utilization of ketone bodies. b. Draw labelled diagram of lipoprotein. Mention the names of lipoproteins with-

c. What are different buffer systems in human body. Write in brief the role of blood

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(3X4M=12M)

(2X2M=4M)

#### FIRST SESSIONAL EXAMINATION DECEMBER 2010 BIOCHEMISTRY, IMS, BHU

WRITE SECTION A AND SECTION B ON SEPARATE ANSWER BOOKS

TIME: 3 HOURS

#### SECTION - A

1) Draw CPP ring. Name five biomolecules containing CPP ring. Describe briefly regulation of cholesterol synthesis.

2) Write short notes on:

- ,a) Mechanism of enzyme action
- b) Isoenzymes & their clinical significance
- 5) Apolipoprotein

3) Describe of the following:

a) Metabolism of phenylalanine & tyrosine, what are the important biomolecules derived from tyrosine

b) 1,25-DHCC

Ch Metabolic role of S adenosyl methionine

#### SECTION - B

1) Discuss the Uronic acid pathway & its importance.

2) Write short notes on:

- A) Different fates of acetyl-Co-A
- (b) Cori's cycle

#### 3) Describe briefly:

- a) Transport across cell membrane
- b) Glucose transporters
- y) Watson Crick model of DNA & Z DNA

MAXIMUM MARKS: 50

2X 3=6

4X3=12

4X3=12

## FIRST SESSIONAL EXAMINATION DECEMBER 2010

## BIOCHEMISTRY, IMS, BHU

# WRITE SECTION A AND SECTION B ON SEPARATE ANSWER BOOKS

TIME: 3 HOURS

----

1

MAXIMUM MARKS: 50

4X3=12

#### SECTION - A

A) Draw CPP ring. Name five biomolecules containing CPP ring. Describe briefly regulation of 7

a)	Mechanism of enzyme action		
b)	Isoenzymes & their clinical significance		
c)	Apolipoprotein		

a) Metabolism of phenylalanine & tyrosine, what are the important biomolecules der ved from tyrosine

b) 1,25-DHCC

c) Metabolic role of S adenosyl methionine

#### SECTION - B

(1) Discuss the Oronic acid pathway & its importance.	7
2) Write short notes on:	3X2= 6
a) Different fates of acetyl-Co-A	
b) Cori's cycle	
3) Describe briefly:	
a) Transport across call membran	4X3=12
a) Transport across cell membrane b) Glucose transporters	and the second second
c) Watson Crick model of DNA & Z DNA	

1<sup>4</sup> Terminal MBBS Examination 2016 Biochemistry (Theory)

Time: Three hours Maximum Marks: 50

Date: 30.08.2016

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int D

#### Attempt all the questions <u>Part A</u> (SX5M=25M)

- What are the sources of carbon and nitrogen atoms in purine and pyrimidine ring? How
  is PRPP synthesized? Discuss the role of PRPP in the biosynthesis of purine and
  pyrimidine.
- 2. Discuss the components of innate and adaptive immune response.
- 3. Discuss the roles of different enzymes in DNA replication. How does telemere protect the ends of eukaryotic chromosomes?
- 4. Discuss the initiation of translation in both prokaryotes and eukaryotes. How do different antibiotics inhibit translation?
- 5. Write a short note on genetic code. What is wobble hypothesis? Explain with example

Licht

Gequestical

Coulso brit

 Define Macrominerals and give examples. Describe briefly about calcium and phosphate metabolism and its regulation. (2+4+4=10 M)

Part B

2. Write short note on (Any three)

- a) Folate trap
- b) Phase 2 Xenoblotic Metabolism
- c) G Protein coupled Receptor mechanism
- d) Mechanism of Oncogenesis.

(3:X5M=15M)

1" Terminal MBBS Examination 2019 **Biochemistry (Theory)** 

Time: Three hours

Date: 19.01.2019 Maximum Marks: 90

Attempt all the questions

#### Section A (45)

-1. What are the different fates of Glucose 6 phosphate? Discuss both the phases of HMP shunt. Explain primaguing induced hemolysis. 2+5+3

> Describe briefly about α- helix and β- pleated sheets? Discuss the forces stabilizing protein 4+4+2 structure. What is the cause of Alzheimer's disease?

3. Write briefly about:

5X5= 25

at pH, pKa, pI - iseelectre A b) Fructose 2, 6 bisphosphate

- c) Warburg effect Arl +
- d) Gluconeogenic substances
- e) Heteropolysaccharides

### Section B (45)

1. Discuss the reactions in beta oxidation of fatty acids. Enumerate number of ATPs generated from complete oxidation of one molecule of palmitic acid. 10

Define enzymes. Classify enzymes. Briefly discuss the specificity of enzyme action with example.

5×5=25

Write briefly about:

-3) Structure and classification of phospholipids

Nitochondria

- C Transport across the cell membrane
- Examples and significance of omega-3 fatty acids
- e) Structure and functions of cholesterol

#### First Sessional Examination December 2008 Biochemistry

All Questions are Compulsory		
Write Section A & Section B on the Separate Answer Booklets		
Time: 3 Hours	Maximum	Marks: 50
Section-A		
1. Write short notes on:		5
(a) Heteropolysaccharides		
(b) Secondary Structure of Protein		
2 Describe Briefly:		5
(a) Digestion & Absorption of Protein		
(b) Fluid Mosaic Model of Cell Membrane		
3. Describe the reaction carried out by the following enzymes & discus	ss the regulation of a	reaction
catalyzed by them.		5
(a) Pyruvate Carboxylase		
(b) Phosphofructokinase		
4. Define Glycogenolysis. Explain the various reaction of Glycogenoly	ysis & how it is regu	ulated. 5
5. Describe the replication of DNA.		5
Section -B		
6. (A) Draw the structure and write one function of each of the follow	ing:	2
(i) Lecithin •		
(ii) Gangliosides •.	1'	
(B) What is the importance of apolipoproteins in lipoproteins?	K.	3
7] Explain with examples from lipid metabolism, the different mechan	nisms to control ena	tyme
action.	And Parked	. 5
8. What are non functional plasma enzymes? Write briefly about the	enzymes that show	variation in
serum in myocardial infarction.		4
9. Write short notes on:		6
(a) Prostaglandins		
(b) Reverse cholesterol transport		
Ter Nucleosomes	dv	5
10 Explain the effect of alcohol on the metabolic activities of the bo	uy.	1

2

(10)

14+5=20)

(5)

(5)

Q 1 With the help of structure of Hemoglobin, explain how it is able to transport 02, CO2, & H+. (50) Q.2. Explain the mechanism of catalysis by Enzymes. What are the factors which effect the

action of an symes & How ?

- Q3. Write short notes on :
  - Covalent modification
  - b. Structure of Biomembrane.
  - c. Glycosaminoglycans.
  - d. Phosphodiester bond.
  - e Enzymes in Liver function test.

#### **G4.** Define:

3. Km

b. Prosthetic group.

#### T. Chaperones.

- d. Eicosanoids.
- c. Anomers.
- GS. Fili up the blanks:
  - a. Cholesterol is an example of \_\_\_\_\_ lipid.
  - b. Sickla cell anemials due to \_\_\_\_\_ mutation.
  - c. A complete turn of a-helix contains an average of \_\_\_\_\_\_ aminoacids.
  - d. Epimer of Glucose is \_\_\_\_\_.
  - e. Adenosine triphosphate contains \_\_\_\_\_ high energy bonds.

#### THE - FERNEXAMINATION

#### DEPARTMENT OF BICHEMISTRY

#### INSTITUTE OF MEDICAL SCIENCES

#### THE LOUIS

DATE 25.11.2009

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4

G 1 With the help of structure of His moglotin, explain how h	t is able to transport 02, CO2, & H+. (10)
Q.2. Explain the mechanism of catalysis by Enzymes Wi	hat are the factors which effect the
action of enzymes & How ?	
G2 Write shore notes an	(4-5-20)
a Covalent modification	
b Mnucture of Biomembrane.	
c Olycotteminoglycans	
d. Phosphodiester bond	
<ul> <li>Entymes in Liver function test.</li> </ul>	
Q4 Define	(5)
a. Nrs	
b. Prosthetic group.	
Tr. Chaperones	
d Eirosanouls	
e Anomera	
QS Hill up the blanks:	(5)
a. Cholesterol is an example of	_ Ipid
b. Sinkle cell anemia is due to	
c A complete turn of a helix contains an average	
2. Epimer of Glucose a	
e. Adenosine triphosphate contains to	sh energy bonds.

#### BIOCHEMISTRY

-AGUILLING COULY

Paper No. - I

Time: Three Hours

Use Separate answer book for each section.

Section - A

Marks - 25

Full Marka: 50

L' Describe the 'Gluconeogenesis' pathway and it's regulation by various hormones. jurger en it's regulation by various hormones. jurger en it's regulation by various to a open in the second 5x3-15

3/ Write short notes on the following:

ua) Structure of intracellular and e-tracellular matrix (a) Structure of intracellular and e-tracellular matrix V-ge Molecular mechanism of oxidative phosphorylation.

#### Section - B:

Marks - 25

. Illustrate the co - enzyme role of various vitamins with suitable examples. In this context explain the biochemical basis of Beriberi. 6+3-9

3/ Outline the process of fatty acid bio - synthesis. Add note on the regulation of AND BALEVA 6+2-8 this process.

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fatan Fil

3. Write very briefly about apy four. (a) Oridative deamination -(b) Chylomicron

(c) Fluid - Mosaic Model of membrane-

(d) Hartnup disease Trypto han Somer Hickor m)

Ve) Carbomoyl Phosphate Synthase - I

Atroneway to the 2: Myanyold Nep

kinners ner

2x4=8 Interes (Medaya

Dehringtase

MBBS J.

#### Department of Biochemistry Institute of Medical Sciences Banaras Hindu University

1" Terminal MBBS Examination 2016 Biochemistry (Theory)

Time: Three hours

Date: 14.03.2016 Maximum Marks: 100

Attempt all the questions

 Explain the hexose monophosphate pathway and its importance in various tissues. Discuss the various applied aspects of this pathway.

2. What are the metabolic products derived from tyrosine and tryptophan? Discuss the pathway of phenylalanine metabolism. Mention the defects associated with it. 15

3 Define primary and secondary bile acids with example. Discuss enterohepatic circulation of bile with its clinical significance. 15

4 Discuss the role of different body buffers along with lungs and kidneys in maintenance of normal pH. 15

 Define enzyme, coenzyme and isoenzyme with example. Discuss diagnostic roles of enzymes with special reference to isoenzymes.
 15

5. Write briefly about:

SX5= 25

a) Fructose Metabolism b) Structure and functions of mitochondria

Phospholipids and their applications

of Tertiary structure of proteins

e) Alcohol Metabolism

#### **DEPARTMENT OF BIOCHEMISTRY** RAMA MEDICAL COLLEGE HOSPITAL & RESEARCH CENTRE MANDHANA, KANPUR -----

(MBBS & Medical M.Sc2016-17)	Date:-24.12.2016
IST INTERNAL ASSESSMENT	<u>Total Marks – 50</u>
A. LONG QUESTION	
X. Define Glycolysis. Give its pathway with en	nergetics. (2+6+2=10)
2. Discuss in detail structural organization of F on denaturation.	Proteins. Add a note (7+3=10)
B. Write short notes on :	(5 x 4=20)
A. Fluidity of Cell Membrane.	
J. Mutarotation.	
S. Regulation of blood calcium.	
Essential fatty acids & importance.	
e. Structural Classification of amino acids.	
C. Very short answer questions :	(10 x 1=10)
<ul> <li>Write the normal value of Blood calcium.</li> <li>Name the semi-essential amino acids.</li> <li>Name the metabolic disorders of calcium.</li> <li>What in the shape of Lactose osazone.</li> <li>Name the epimers of glucose.</li> <li>Name the Key regulating enzyme of glycos.</li> <li>Name the glycosidic bond present in malt</li> <li>What is the difference betweeen Benedict'</li> <li>Name the GLUT concerned with absorption intestine.</li> </ul>	ose. s test & Barfoed's test.

1

3<sup>rd</sup> Terminal MBBS Examination 2021

Time: 3 hours

Date: 11/12/21 Full Marks: 100 J-ATTGAC.3'

S'.GCCACA.3'

erective DNA repair.

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#### Paper II

1. A 54-year-old man with a history of chronic lung disease comes to the emergency department with difficulty in breathing, fever and cough. Upon examination, crackles and wheezes can be heard in the lower lobes; he has tachycardia and a bounding pulse. Arterial blood gas analysis shows pH 7.3, PaCO2 68 mm Hg and HCO3 28 mmol/L. (a) What acid base imbalance is it? (b) Which compensatory mechanisms can play a role in this condition? 1+6+3 (c) Write normal range of blood pH, PaCO2 and HCO3

2. What are the differences in prokaryotic and eukaryotic transcription? Tabulate different post transcriptional modifications. What is the role of ribozyme in post transcriptional modifications? 5+2+3

6X10

3. Write short notes: a) Bence Jones Proteinuria b) Immune response c) Antioxidant defence systems in our body d) Cell cycle e) Kidney function test f) Tumor Markers g) Chromatogrphy h) Gene cloning i) Nucleosome j) Hypersensitivity reactions

ecular Biology

4. Give reasons of the following:

a) Hyperuricemia occurs with excess alcohol ingestion 5 b) Mucleotide biosynthesis require one carbon metabolites c) 6 mercaptopurine is an anticancer drug d) Orotic aciduria is a disorder of pyrimidine metabolism e) Diphtheria toxin inhibits translation = f) Telemere is present in eukaryotic DNA g) Agarose gel is used to separate larger DNA fragments h) colostrum has immune function i) p53 is called the Guardian of the Genome j) Febuxostat is hypouricemic drug

""A primers

· «cessive condition

## 16/05/2022 19:14

# REDMI NOTE 105 | 27/04/2022 0000

**Department of Biochemistry** Institute of Medical Sciences **Banaras Hindu University** 

1<sup>st</sup> Terminal MBBS Examination 2020 **Biochemistry (Theory)** 

**Time: Three hours** 

Date: 04.03.2020 Maximum Marks: 100

#### Attempt all the questions

1. Mention the coenzymes for vit. B1, B2, B3, B6 and the type of reactions they catalyse. Write one reactions for each. 4+6

2. Discuss the synthesis and fate of LDL cholesterol. What is the normal serum level of LDL cholesterol? Discuss the importance of HDL and LDL cholesterol in cardiovascular disorders.

	372414
3. Discuss the biomedical importance of carbohydrates. ORS	5
A. What are the sources of ammonia in our body? Describe detoxification of ammonia.	1+4
5 Define zwitter ion with example. How can zwitterionic forms of protein be utilized in separation?	their 2+

6. Mention different level of structural organization of proteins. Discuss α helix and β pleated sheet with example. 1+4

7. Write short notes on the following:

10X3=30

Ans 20 Mar

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REALION

www.whitecoatwritings.com

a. Importance of Cori's cycle

- b. Importance of uronic acid pathway
- Importance of different glucose transporters for different tissues C.
- d. Enterohepatic circulation of bile
- e. Km and Vmax of enzyme

- Enzymes used in diagnosis of myocardial infarction
- g. Metabolic products derived from glycine
- h. ATP dependent protein catabolism
- blowd ubbles! Mechanism of action and therapeutic property of statins i.

# 1402/2022 1041

### REDMI NOTE 105 | 27/04/2022

- Empathy in patient encounter j.
- 8. Give your reasoning on the following:
  - a. Fat burns in the flame of carbohydrate
  - Analgesics are not taken in empty stomach b.
  - Morning hyperglycemia C.
  - Requirement of vitamin increases with increase in dietary carbohydrate d.
  - Hexokinase deficiency leads to haemolytic anemia e.
  - Amino acids in our body are not always coded
  - ORS is used in the treatment of diarrhoea g.
  - Megaloblastic anemia can occur in cobalamin deficiency h.
  - Excess carbohydrate is converted to fats but reverse does not occur 1.
  - Phenylketonuria is screened at birth
  - Disorder of amino acid absorption can lead to nephrolithiasis
  - Pantothenic acid is required in fatty acid biosynthesis
- m. Allosteric regulation is most important form of immediate regulation
- n. Vit K cannot be given orally in chronic liver disease
- o. Agarose gel is used for electrophoresis of genomic DNA

15X2=30

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Department of Biochemistry Institute of Medical Sciences **Banaras Hindu University** 

3rd Terminal MBBS Examination 2020 Biochemistry (Theory)

Date: 13.01.2021

Maximum

2.3 BPLA

57.

5

5

5

5

Time: Two hours

Marks: 50

Attempt all the questions

1. Explain the pathway of glycolysis and its importance in RBCs .

2. What is reciprocal regulation? Explain it in reference to glycogen metabolism.

3. Name different lipoproteins. Discuss the formation and fate of chylomicrons. Burtyrate arctions 4. Name different ketone bodies. How are they synthesized?

. Describe urea cycle along with its regulation. How is it related to urea cycle? 5. Enumerate orders of protein structure. Explain  $\alpha$  helix and  $\beta$  pleated sheet with stoin, kenetta

example.

5

5

5

7. Describe in detail functions, deficiency and excess of Vitamin A

8. Discuss role of kidneys in regulation of pH.

9. Discuss different parameters of liver function tests.

10. What is translocation in translation? Discuss the antibiotics inhibiting translation.



### Institute of Medical Sciences Banaras Hindu University

2<sup>nd</sup> Terminal MBBS Examination 2021 Biochemistry (Theory)

Date: 30.09.2021 Maximum Marks: 100

Attempt all the questions

1. A middle age woman was brought to the emergency department of a hospital after she fell into the ground and hurt her left leg. She is having tachycardia and tachypnoea. Painkillers were given to lessen her pain. Suddenly, she started complaining that she is still in pain and now also experiencing muscle cramps, tingling, and paraesthesia. Measurement of ABG reveals pH- 7.6, PCO<sub>2</sub>- 31 mm Hg, and HCO<sub>3</sub>- 25 mmol/L.

- (a) What is the diagnosis?
- (b) Give normal ranges of blood pH, PCO2 and HCO3
- (c) What is alkali reserve?

13 bis photoph

(d) Enlist possible complications of acid-base imbalances

A) Kalosis

2. An 18-year-old man who had suffered a flu-like illness for the previous two weeks is seen by his GP. Clinical examination includes urinalysis which indicates that his urine is strongly positive for protein on dipstick testing. A 24-hour urine collection done to confirm the dipstick finding shows gross proteinuria of 3g/24hours. The patient has pitting oedema of both ankles and his blood pressure is 142/84 mmHg. He is referred urgently for renal review and his baseline urea and electrolytes are as follows; Na+ 127 mmol/L (135-145), K+ 4.8 mmol/L (3.4-4.9), Urea 11.6 mmol/L (2.5-8.0) ,Creatinine 152 μmol/L (40-130) Renal biopsy confirmed an acute glomerulonephritis.

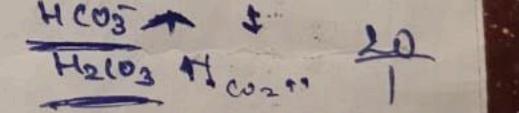
(a) Describe and comment on the biochemical abnormalities.

2+2+3+3=10

Time: Three hours

(b) Give your assessment of the patient's sodium and water status.(c) Why does the patient have oedema?

4+3+3=10



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### PREVIOUS YEAR GUESTIONS

Cellular Organisation \* Fluid Mosaic Model of cell Monterance \* Transport across cell membrane - Active and Passive \* Na-K ATPase and Inhibitors + Mitochondnia \* Ribosome \* Eukonyofic & Prokaryofic cell \* Perovisome

\* Structure of Intracellular and Extracellular Matrix

Carbohydrak Metabolism - Glucose Transporter -Reactions catalysed by ALT (SYPT) and AST ( SGOT) - Regulation of Glycolysis - Sostitol Pathway - Futile Gycles - Rapaport Leubring Pathway - Fait burns in flome or carbohydrate - quicagon has no effect on muscle glycogen - Generogenesis -> generose - Alanine and Con cycle -> VONGIERKE'S Dicease - Reciprocal Regulation - HMP Shunt Pathway -> 96PD Deficiency - GTT - Glycolysis in RBC - Ketone Bodies - Fructose Metabolism and Fructose Intolevance and all a file - Glycemic Index

- Glycogen Metabolism
- Galactoremia
- Blood Sugar regulation Deabetes Mellitus
- Epimousm
- Pyruvak Dehydroginase
- Digestion and Metabolism of Starch
- Essential Fructoeuria
- Glycogen storage Disease -> Inhuited Disprolurs

nd extracellector pH Enzymes - Diagnostic Application of Enzyme - Factors affecting enzyme velocity, Km - Enzyme Inhibitors - Revensible and Irrevensible / Competivitie -Isoensyme and co-enzyme and Non-competitive -specificity of enzyme action - Enzyme profile in Liver Disease -functional & Non-Functional Inzyme - Allestoria Inhibitors - Mechanism controlling enzyme action - Covalent Modification of enzyme

### Vitamins

- Folate Trap
- seurcy Vitamin C
- Thiamin -Deficiency manifestations
- Riboflavin - Beri-Beri
- Vitermin B12
- Folie Acid
- Visital cycle Vitamin A
- -Anti-oxidant Mitamins

-Visual Pumple

- Trans cobalamine
- Avidine (B10)

- Vitamin B3 Pellagra - Anti-Haemorrhagic Vitamin
- -co-enzyme role of Vitamins -Role of Vitamin K in Coagulation
- Body Fluids and pt Buffer Lystem in Body -> Blodd Buffer flormonal Regulation of Fluid Balance Role of Orbonic Anhydrase in maintaining pH

- - Nucopolysacchanide - Lactore Intolerance

- Cystic Fibrosis

- Protein Metabolism + Amino Acid Metabolism
- Protain mispolding disease
- Non-Standard A.A.
- Transdeamination, Transamination, Deamination, Oxidative
- Phenyeketonuria
- classify amino acids and Proteins
- Zwitter ions
- a-Helix and B-Pleated sheet
- Ammonia rietabolism
- Tyrasine -> Its sparing action on Phenylalanine
- Tryptophan
- Phenylalanine -> Degradation, Diseases
- Structure of Proteins
- Urea Cycle
- Aromatic A.A.
- Maple Syrup Usine Disease
- Catecholamines
- Alkoptonuvia
- Hartnup Disease
- CPS-I

Re

- Creatine Kinase
- Tay-sachs Disease - Branched chain and and their metabolism - Glycine

Deamination



#### Numbion

- Protein Energy Malnumition
- Balanced Biet
- RDA
- -Obesity - Calone Malnutrition
- Importance of protein in diet

### Immundogy

- \* Type IV hypersensitivity reaction
- Cell mediated immunity
- Innate and Adaptive immunity
- structure & function Igg, IgM, IgE
- Immunoglobins and their function
- Arrangement of Immunoglobin in germ line
- Formation of final Ig Gene by sometic gene recombination

Hormomes - glucagon - Mechanism of action - signal Tronsduction - Significance

- Insulin Signalling and Action - 9-Protein Coupled Receptor - Hormones regulating blood volume - classify Hormone on basis of action - Hormonal action through nuclear receptor - Mechanism of action of storoid thomones

#### Department of Biochemistry Institute of Medical Sciences **Banaras Hindu University**

3<sup>rd</sup> Terminal MBBS Examination 2022

Time: 2 hours

Paper II Answer all the questions MCQ 20 Marks

1. Discuss the regulation of eukaryotic gene expression.

2: What are the causes of jaundice? How will you differentiate between them with the help of liver function tests?

3. Answer the following questions:

A) What is metabolic acidosis? Describe its types, causes and diagnosis.

b) Draw a labelled diagram of structure of antibody. What is Bence Jones proteinuria?

c) Discuss termination of prokaryotic transcription.

(d) Write briefly on hormonal regulation of water homeostasis

e) Discuss phase II reactions of xenobiotic metabolism f) Draw a flowchart of molecular gene cloning. What are its applications?

g) How is uric acid synthesized in our body? Mention the diseases associated with uric acid

biosynthesis.

Date: 03/12/22 Full Marks: 100

12

7X8

### Lipid Metabolism

- Essential & Non-Essential Fally Acids \* FATTY LIVER
- CPPP ring
- Synthesis and Regulation of Cholestorol in body
- -Lipotropic factors
- Oleic and Elaideric Acid
- Gyrenophospholipid and sphingolipid
- lipoprotein
- Phospholipids
- Beta-Oxidation
- Prostaglandins
- Digestion and Absorption of Lipids Bile Salts Jaundice
- De novo synthesis of fatty acid
- Chylomicrons
- Lipogenesis from Glucose
- -Stevenids
- carnitine Shuttle
- Myocardial Infarction

# Integrated Metabolism

- Litnic Acid Cycle
  - FATTY LIVER

-Substrate Level Phosphorylation - Oxidative Phosphory Cation

Figle Test

- ETS and its inhibitors
- Uncounters and Couplins of ETC
- One carbon metabolism
- Alcohol Metabolism Acute & Chronic Condition
- Anaplanatic and Cataplarotic Reautions

- Primary and Secondary Bile Acids - Entorohepatic Couldion - Substrate Shuttles - Malarte Asportate - gycerol Phosphate - chemitomotic Theory

- Cyanide Poisoning



- Michanium maintain intro- and extracelluctar pH - Role of kidney in maintaining pH. - Alkali Resource

Nuclei Avid Metabolism - Unic Acid metabolism -Source of C&N in Punine & Pyrimidine \* Hyperuncernia - Role of PRPP in biosynthesis - Salvage Pathway

Transemption, Translation, Replication -Vitamins in Post-translational - Transcription - Regulation modification \* Post-Fronstational Modification - Translation - Eukerypte ve. In keyol \* the has Openen - Nucleosome - Turner Suppressor Gene - Function of different DNA Polymonoge Eukanyole us prokanyole - Tag Polymonase accentic code and wobble Hypothesis

- Topoisonunase \* game Telomonase
- -Role of Different enzyme in Replication
- Initiation of Translation and Inhibition by antibiotics
- Elongation step of Translation and Inhibitors of Translation
- Double Helix Moder of DNA
- Induction & Repression
- Catalytic Property of DNA Polymenese
- DNA Polymorase I Use in DNA replication & repair
- Choromatin Remodelling Complex

# 1<sup>st</sup> Professional MBBS Biochemistry Syllabus

### Paper I Section A

- 1. Molecular and functional organization of a cell
- 2. Chemistry, digestion, absorption and metabolism of Carbohydrates
- 3. Enzyme including isoenzymes and clinical enzymology
- 4. Biological Oxidation
- 5. Chemistry, digestion, absorption and metabolism of lipids

### Section B

- I. Chemistry, digestion, absorption and metabolism of proteins
- 2. Water and fat soluble vitamins
- 3. Mineral metabolism
- 4. Nutrition
- 5. Extracellular Matrix
- 6. Functions and metabolism of heme along with porphyria

### Paper II

### Section A

- 1. Molecular biology including DNA replication, transcription, translation along with structural organization and basic mechanism of regulation of gene expression.
- 2. Principles and applications of genetic engineering

### Section B

- Processes involved in maintenance of normal pH, water & electrolyte balance of body fluids and the derangements associated with these.
- 2. Chemistry of blood
- 3. Oncogenesis
- 4. Role of xenobiotics, oxidative stress, antioxidants
- 5. Principles of conventional and specialized laboratory investigations
- 6. Functions, tests and abnormalities of kidney, liver, thyroid and adrenal glands
- 7. Immunology

These topics are indicative and must be correlated with competencies advised by National Medical Council