

DZ-4005

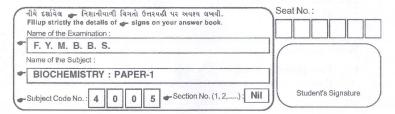
First Year M. B. B. S. Examination

June / July - 2016

Biochemistry: Paper-I

Time : $2\frac{1}{2}$ Hours] [Total Marks : 40

Instruction:



1 Write short notes: (2 out of 3)

- 0
- (1) Describe electron transport chain and its inhibitors.
- (2) Describe metabolism of VLDL and LDL.
- (3) Describe β oxidation of palmitic acid.
- 2 Write in brief: (4 out of 6)

12

- (1) Protein energy malnutrition
- (2) Significance of NADPH
- (3) Metabolic acidosis
- (4) Gluconeogenesis
- (5) Utilization of ketone bodies
- (6) Mucopolysaccharide.
- Read following case and answer the following questions:

 A 48 year old male was brought to emergency ward with complaints of severe chest pain, breathlessness for last three hours. His total cholesterol was 642 mg/dl, LDL cholesterol was 352 mg/dl. On the basis of ECG and blood investigation on

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duty doctor diagnosed acute myocardial infarction (AMI). The patient was treated with streptokinase infusion along with other supportive treatment. Patient was discharged after 10 days. At the time of discharge Tab Atrorvastatin, Tab Aspirin were prescribed to him along with other drugs

- (1) What is the role of streptokinase in the treatment of AMI?
- (2) Name two early markers of AMI.
- (3) What is rationale of prescribing aspirin tablets?
- (4) What are other risk factors for coronary artery disease?
- (5) Why LDH is not a preferred marker for early diagnosis of AMI?
- Write justification in 2-3 lines: (5 out of 7)
- 10
- For plasma glucose estimation blood is collected in fluoride tubes.
- (2) 2-3 BPG decrease affinity of oxygen with hemoglobin.
- (3) Vitamin D can be considered as hormone.
- (4) Acute alcoholism can trigger gouty arthritis.
- (5) Glucose is added in oral rehydration solution (ORS) given in the treatment of diarrhoea.
- (6) Fibers is an important constituent of diet.
- (7) HDL cholesterol is good cholesterol.



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First Year M. B. S. Examination

June / July - 2016

Biochemistry: Paper - II

Time:	$2\frac{1}{2}$ Hours]	[Total Marks: 40				
Instru	ctions:					
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1 Sh	hort Notes : (2 out of 3)	8				
(1) (2) (3)	Urea cycle					
2 W	Vrite in Brief: (4 out of 6)	12				
(1) Characteristic of Genetic code.					
(2	Hyperuricemia and gout.					
(3	Factors affecting enzyme activity.					
(4	Post translation modification					
(5	6) Biochemical basis of scurvy					
(6	B) Polymerase chain reaction.					
3 R	ead Following Case & Answer the Question	on: 10				
A	A 65 year old male who was unwell for past few days came					
fo m ye b	or consultation. He had developed loss of appraisal and nausea he also reported that his ellow from last two weeks his urine is turn ut colour of the stool is pale. His blood an evere as follows	petite, weakness eyes were dark ned dark yellow				
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Blood chemistry

Total bilirubin 10.2 mg%

Indirect bilirubin 1.5 mg%

Direct bilirubin 8.7 mg%

APTT — Test: 60 sec

Serum AST 28/IU/L

Serum ALT 32 IU/L

Serum ALP 220 U/I

APTT - Control: 30 sec

Urine examination

Bile pigment: Present

Urobilinogen: Absent

Bile salts: Absent

- (1) What is the difference between direct and indirect bilirubin?
- (2) Write about different types of jaundice and their causes?
- (3) What are enzyme markers for different types of jaundice?
- (4) Give biochemical explanation for abnormal APTT level.
- (5) Why bile salts are present in urine in this case
- 4 Write a justification in 2-3 lines: (5 out of 7)

10

- (1) Vitamin B12 and folic acid deficiency can cause hyperhomocysteinemia
- (2) Blood Buffers act quickly but not permanently.
- (3) Phenobarbitone can precipitate acute intermittent porphyria.
- (4) Zwitterion has least buffering and solubility.
- (5) Glutathione and NADPH play important role for maintain RBC membrane
- (6) Biotin is known as anti-egg white injury factor
- (7) Glycine does not exhibit optical isomerism

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	and the second second		
5 MCQs			1×10=10
	Thich of the followin A) Proline	g amino acid is pui	rely ketogenic ?
	3) Leucine		
	C) Glycine		
I)	O) Valine		
(2) A	ll of the following c	o-enzymes participa	ate in hydrogen
	on and electron trai		3.01 (2)
	A) FMN		
	B) NAD ⁺		
	C) NADP		
(I	O) PLP		
	n competitive inhibi		
(4	A) Km and Vmax	both decrease	
	B) Km decreases a		
(6	C) Km increases a		ed ((i)
()	D) Km increases a	nd Vmax decreses	
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(4)	Which of the following amino acid doesn't show optical isomerism?
	(A) Serine
	(B) Glycine
	(C) Glutamine
	(D) Proline
(5)	Lesch-Nyhan Syndrome is caused by deficiency of which enzyme?
	(A) Xanthine oxidoreductase
	(B) IMP dehydrogenase
	C. Adenine phosphoribosyltransferase
	(D) Hypoxanthine guanine phosphoribosyltransferase
(6)	Gamma glutamyl cysteinyl glycine is otherwise known as
	(A) Oxytocin
	(B) Glutathione
	(C) Angiotensin
	(D) Bradykinin
(7)	The source of nitrogen atoms in urea are ammonia and
	(A) Alanine
	(B) Glutamate
	(C) Aspartate
	(D) Arginine
(8)	Chaperone proteins play important role in
	(A) Protein folding
	(B) Protein misfolding
	(C) Protein synthesis (D) Denaturation
(-)	
(9)	Which of following hemoglobin has least affinity with
	2-3 Biphosoglycerate ? (A) HbA
	(B) HbF
	(C) HbAI _c
	(D) HBA ₂
(10)	All of the following are phase I detoxification reactions
(10)	EXCEPT
	(A) Oxidation
	(B) Reduction
	(C) Conjugation
	(D) Hydrolysis.
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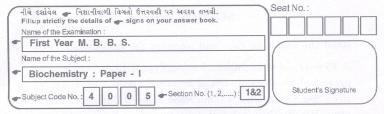
ER-4005

First Year M. B. B. S. Examination

December - 2016

Biochemistry: Paper - I

Time: $2\frac{1}{2}$ Hours]	[Total Marks : 50
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Instruction:	



SECTION - I

1 Short Notes: (2 out of 3)

- 8
- (a) Describe the sources, biochemical functions and disorders of calcium metabolism.
- (b) What is gluconeogenesis? Describe the gluconeogenesis from various substrates.
- (c) Buffer system of blood for maintenance of pH.
- 2 Short Notes: (4 out of 6)

12

- (a) Lipoproteins: types, composition and functions.
- (b) Digestion, absorption, transport, functions of Iron.
- (c) Essential Fatty Acids and their significance.
- (d) Lactose intolerance.
- (e) Cori's cycle.
- (f) Liver function tests.

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Answer in one or two lines : (5 out of 6) Lead toxicity effects. Functions of prostaglandins. Blood is collected in fluoride bulb for estimation of blood glucose level. Function and deficiency manifestation of iodine. (d) Significance of HMP shunt. Ketone bodies functions. SECTION - II Read the following case and answers the questions: A 45 year old male patient having Type 2 Diabetes Mellitus presented with complaints of impaired vision and feeling of tiredness. Ophthalmic examination showed Cataract in both eyes. His Biochemical test reports were : Fasting Plasma Glucose = 300 mg/dl, Urine Glucose ++++, Glycated Hb (HbA1C) = 12%.Why Cataract develops more commonly and earlier in patients of Diabetes Mellitus? What is Glycated Hb and significance of estimating it? What are other late complications of Diabetes Mellitus besides cataract? Differentiate between Type1 and Type 2 Diabetes Mellitus. (4)How much is the renal threshold for Glucose? What are the other causes of Glycosuria? Write justification: (5 out of 7) Starvation causes ketoacidosis. In RBCs, end product of Glycolysis is always lactate.

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LDL cholesterol is bad cholesterol. TCA cycle is amphibolic pathway.

[Contd...

- (e) Hemolysed serum sample is not suitable for estimation of potassium.
- (f) Aspirin is used as anti-inflammatory drug.
- (g) Deficiency of enzyme Glucose 6 Phosphate Dehydrogenase (G6PD) causes drug induced hemolysis.
- 6 Answer in one or two lines: (5 out of 6)

5

- (a) Functions of selenium
- (b) Functions of magnesium
- (c) Uncouplers
- (d) Functions of dietary fibres.
- (e) Physiologically important glycosides
- (f) Specific dynamic action of food.



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First Year M. B. S. Examination

December - 2016 Biochemistry : Paper - II

Time : $2\frac{1}{2}$ Hours]	[Total Marks : 50
Instruction:	
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Name of the Subject :	
BIOCHEMISTRY: PAPER - 2	
Subject Code No.: 4 0 0 6	Section No. (1, 2,): 1&2 Student's Signature
SE	CTION - I
1 Short notes: (2 out of 3)	8 (iii) President and and and and
(a) Describe the process	of heme degradation to bile pigment.
(b) Describe the metabo	dism of tyrosine along with important
compounds synthesiz	zed from tyrosine.
(c) Describe the factors	affecting on enzyme activity.
2 Short notes: (4 out of 6	12
(a) Recombinant DNA t	
(b) Tumour markers	
(c) Beriberi.	
(d) Diagnostic application	ons of enzymes
(e) Post translational m	odifications
(f) Functions and disor	ders of vitamin C.
3 Answer in one or two lin	nes: (5 out of 6) 5
(a) Functions of niacin	vitamin.
(b) Biologically importan	nt peptide examples (any four).
(c) Name the uses of P	CR.
. ,	tern in myocardial infarction?
(e) What is the function	n of restriction endonuclease?
(f) What are plasma pr	roteins ?
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SECTION - II

4	Read the following case and answers the questions:	10
	A 40 year old man came to O.P.D with the complaint	
	of severe interphallangeal joint pain of his right hand since	
	morning. He gave history of consumption of much food and	
	alcohol in the previous night. Laboratory investigation of	
	Biochemical parameters were normal except serum uric acid	
	level 10 mg% (normal 3-7mg %). The cause was diagnosed as	
	"Acute Gout" he was given conventional treatment with	
	Allopurinol,	
	(1) What is Gout?	

- (2) What are the causes of Primary gout?
- (3) What is the precursor substance of uric acid?
- (4) What is basis of treating patient with allopurinol?
- (5) How will you correlate between alcohol consumption and acute gouty attack?
- 5 Write justification: (5 out of 7)

10

- (a) Replication of DNA is semiconservative.
- (b) Protein malnutrition causes oedema.
- (c) Enzyme inhibition property is used for treatment of diseases.
- (d) Methotrexate is used for the treatment of cancer.
- (e) Zwitter ions doesn't move under electric field.
- (f) Excess of ammonia is toxic to the brain.
- (g) Folic acid supplements are helpful in a person with high homocysteine level.
- 6 Answer in one or two lines: (5 out of 6)

5

- (a) Applications of PCR.
 - (b) What is acute phase protein? Give two examples.
 - (c) Active form of vitamin D, gives its daily requirement for adult.
- (d) Define detoxification.
- (e) Inhibitors of protein synthesis (any two).
- (f) Which compounds synthesized from Tryptophan amino acid ?

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