



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 :

नीचे दशांश निशानीवाली विंगती उत्तरवकी पर अवश्य बखवी. Fillup strictly the details of signs on your answer book.	Seat No. : <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>
Name of the Examination : <input type="text" value="F. Y. M. B. B. S."/>	<input type="text" value="Student's Signature"/>
Name of the Subject : <input type="text" value="BIOCHEMISTRY : PAPER-1"/>	
Subject Code No. : <input type="text" value="4"/> <input type="text" value="0"/> <input type="text" value="0"/> <input type="text" value="5"/> Section No. (1, 2,.....) : <input type="text" value="Nil"/>	

- 1 Write short notes : (2 out of 3) 8
- (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.
- 3 Read following case and answer the following questions : 10
- 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 ?

4 Write justification in 2-3 lines : (5 out of 7) 10

- (1) 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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Biochemistry : Paper - II

Time : $2\frac{1}{2}$ Hours]

[Total Marks : 40

Instructions :

(1)

नीचे दशांशवैष निशानावाणी विग्नो कतारवही पर अवश्य लपनी. Fillup strictly the details of signs on your answer book.	Seat No.:
Name of the Examination :	<input type="text"/>
First Year M. B. B. S.	<input type="text"/>
Name of the Subject :	<input type="text"/>
BIOCHEMISTRY: PAPER - 2	<input type="text"/>
Subject Code No. : 4 0 0 6	Section No. (1, 2,.....): Nil
	Student's Signature

- 1 Short Notes : (2 out of 3) 8
- (1) Molecular basis of Sickle cell disease
 - (2) Urea cycle
 - (3) Replication of DNA.
- 2 Write 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) Biochemical basis of scurvy
 - (6) Polymerase chain reaction.
- 3 Read Following Case & Answer the Question : 10
- A 65 year old male who was unwell for past few days came for consultation. He had developed loss of appetite, weakness malaise and nausea he also reported that his eyes were dark yellow from last two weeks his urine is turned dark yellow but colour of the stool is pale. His blood and urine reports were as follows

Blood chemistry

Total bilirubin 10.2 mg%	Serum AST 28 IU/L
Indirect bilirubin 1.5 mg%	Serum ALT 32 IU/L
Direct bilirubin 8.7 mg%	Serum ALP 220 U/l
APTT — Test : 60 sec	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



Date of issue : Centre :
Sup. Sign. : Seat No. :

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First Year M. B. B. S. Examination
June / July - 2016
Biochemistry : Paper - II

Time : 10 Minutes]

[Total Marks : 10

OBJECTIVE QUESTIONS

Instruction :

नीचे दशांशिक निशानीवाणी विद्यते उत्तरवही पर अवश्य लખनी.
Fillup strictly the details of signs on your answer book.

Name of the Examination :
F. Y. M. B. B. S.

Name of the Subject :
BIOCHEMISTRY : PAPER - 2

Subject Code No. : 4 0 0 6 Section No. (1, 2,.....): Nil

Seat No. :

Student's Signature

5 MCQs : 1×10=10

- (1) Which of the following amino acid is purely ketogenic ?
 - (A) Proline
 - (B) Leucine
 - (C) Glycine
 - (D) Valine

- (2) All of the following co-enzymes participate in hydrogen ion and electron transport EXCEPT
 - (A) FMN
 - (B) NAD⁺
 - (C) NADP
 - (D) PLP

- (3) In competitive inhibition of enzyme
 - (A) Km and Vmax both decrease
 - (B) Km decreases and Vmax unchanged
 - (C) Km increases and Vmax unchanged
 - (D) Km increases and Vmax decreases

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[Contd....

- (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) HbA_{1c}
(D) HBA₂
- (10) All of the following are phase I detoxification reactions EXCEPT
(A) Oxidation
(B) Reduction
(C) Conjugation
(D) Hydrolysis.



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First Year M. B. B. S. Examination

December - 2016

Biochemistry : Paper - I

Time : $2\frac{1}{2}$ Hours]

[Total Marks : 50

Instruction :

← निवे दशावेव नशा-नीवाणी वलतते ततदवडी पर अवशय लभवी. Fillup strictly the details of signs on your answer book.	Seat No.:
Name of the Examination :	<input type="text"/>
← First Year M. B. B. S.	<input type="text"/>
Name of the Subject :	<input type="text"/>
← Biochemistry : Paper - I	<input type="text"/>
← Subject Code No. : <input type="text" value="4"/> <input type="text" value="0"/> <input type="text" value="0"/> <input type="text" value="5"/> ← Section No. (1, 2,.....): <input type="text" value="1&2"/>	Student's Signature

SECTION - I

- 1 Short Notes : (2 out of 3) 8
- Describe the sources, biochemical functions and disorders of calcium metabolism.
 - What is gluconeogenesis? Describe the gluconeogenesis from various substrates.
 - Buffer system of blood for maintenance of pH.
- 2 Short Notes : (4 out of 6) 12
- Lipoproteins : types, composition and functions.
 - Digestion, absorption, transport, functions of Iron.
 - Essential Fatty Acids and their significance.
 - Lactose intolerance.
 - Cori's cycle.
 - Liver function tests.

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[Contd...

- 3 Answer in one or two lines : (5 out of 6) 5
- (a) Lead toxicity effects.
 - (b) Functions of prostaglandins.
 - (c) Blood is collected in fluoride bulb for estimation of blood glucose level.
 - (d) Function and deficiency manifestation of iodine.
 - (e) Significance of HMP shunt.
 - (f) Ketone bodies functions.

SECTION - II

- 4 Read the following case and answers the questions : 10

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%.

- (1) Why Cataract develops more commonly and earlier in patients of Diabetes Mellitus?
 - (2) What is Glycated Hb and significance of estimating it?
 - (3) What are other late complications of Diabetes Mellitus besides cataract?
 - (4) Differentiate between Type1 and Type 2 Diabetes Mellitus.
 - (5) How much is the renal threshold for Glucose? What are the other causes of Glycosuria?
- 5 Write justification : (5 out of 7) 10
- (a) Starvation causes ketoacidosis.
 - (b) In RBCs, end product of Glycolysis is always lactate.
 - (c) LDL cholesterol is bad cholesterol.
 - (d) TCA cycle is amphibolic pathway.

- (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)

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- (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. 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 Examination : FIRST YEAR M. B. B. S.	Student's Signature
Name of the Subject : BIOCHEMISTRY : PAPER - 2	
Subject Code No. : 4 0 0 6 Section No. (1, 2,.....) : 1&2	

SECTION - I

- 1 Short notes : (2 out of 3) 8
(a) Describe the process of heme degradation to bile pigment.
(b) Describe the metabolism of tyrosine along with important compounds synthesized from tyrosine.
(c) Describe the factors affecting on enzyme activity.
- 2 Short notes : (4 out of 6) 12
(a) Recombinant DNA technology.
(b) Tumour markers
(c) Beriberi.
(d) Diagnostic applications of enzymes
(e) Post translational modifications
(f) Functions and disorders of vitamin C.
- 3 Answer in one or two lines : (5 out of 6) 5
(a) Functions of niacin vitamin.
(b) Biologically important peptide examples (any four).
(c) Name the uses of PCR.
(d) What is enzyme pattern in myocardial infarction ?
(e) What is the function of restriction endonuclease ?
(f) What are plasma proteins ?

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[Contd...

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 interphalangeal 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 ?