[LL 505] AUGUST 2017 **Sub.Code : 5056**

M.B.B.S. DEGREE EXAMINATION
FIRST YEAR
PAPER VI – BIOCHEMISTRY - II

Q.P. Code: 525056

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

Answer All Questions

I. Essay: **(1 x 10 = 10)**

1. Write in detail about the metabolism and functions of cysteine. Name the associated inborn errors.

II. Write notes on: **(5 x 4 = 20)**

1. Gout.
2. Role of lungs in acid base balance.
3. Tests to assess glomerular function.
4. Southern blot.
5. Post transcriptional modifications.

III. Short answers on: **(10 x 2 = 20)**

1. Names of any four neurotransmitters.
2. Four functions of albumin.
3. Factors affecting electrophoresis.
4. Hyperkalemia.
5. Functions of phosphate ions.
6. Any two anti metabolites and its use.
7. Any four uses of polymerase chain reaction.
8. Inhibitors of protein translation.
9. Telomerase.
10. Alkaptonuria.

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[LL 505] NOVEMBER 2017 **Sub.Code : 5056**

M.B.B.S. DEGREE EXAMINATION
FIRST YEAR
PAPER VI – BIOCHEMISTRY - II

Q.P. Code: 525056

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

Answer All Questions

I. Essay: **(1 x 10 = 10)**

1. Brief about the conversion of phenylalanine to tyrosine. Describe in detail about phenylketonurias.

II. Write notes on: **(5 x 4 = 20)**

1. DNA repair mechanism.
2. Glutathione.
3. Tests to assess renal tubular function.
4. Polymerase chain reaction.
5. Metabolic acidosis.

III. Short answers on: **(10 x 2 = 20)**

1. Applications of electrophoresis.
2. Lesch–Nyhan’s syndrome.
3. Products formed from glycine.
4. Maple syrup urine disease.
5. Inhibitors of transcription.
6. Histamine.
7. Gamma amino butyric acid.
8. Phase II reaction of xenobiotics.
9. Functions of parathormone.
10. Nitric oxide.

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[LN 505] AUGUST 2018 **Sub.Code : 5056**

M.B.B.S. DEGREE EXAMINATION
FIRST YEAR
PAPER VI – BIOCHEMISTRY - II

Q.P. Code: 525056

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

Answer All Questions

I. Essay: **(1 x 10 = 10)**

1. Write in detail about ammonia production, transport and disposal. Add a note on disorders of urea cycle.

II. Write notes on: **(5 x 4 = 20)**

1. Tests done to assess synthetic functions of liver.
2. Properties of genetic code.
3. Respiratory acidosis.
4. Importance and applications of recombinant DNA technology.
5. Proteinuria.

III. Short answers on: **(10 x 2 = 20)**

1. Importance of transamination reaction.
2. Causes of secondary gout.
3. Enzymes as tumour markers.
4. Point mutation.
5. Denaturation reactions of proteins.
6. Cystinosis.
7. Melatonin.
8. Normal value of plasma osmolality and urine osmolality.
9. Orotic aciduria.
10. Cell cycle.

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[LN 505] NOVEMBER 2018 **Sub.Code : 5056**

M.B.B.S. DEGREE EXAMINATION
FIRST YEAR
PAPER VI – BIOCHEMISTRY - II

Q.P. Code: 525056

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

Answer All Questions

I. Essay: **(1 x 10 = 10)**

1. Write briefly the mechanisms by which the pH of the body fluids is regulated. Add a note on acid base disturbances with examples.

II. Write notes on: **(5 x 4 = 20)**

1. Post translational modifications with examples.
2. Blotting techniques.
3. Classify jaundice based on liver function tests.
4. Structure of collagen.
5. Classes of Immunoglobulins.

III. Short answers on: **(10 x 2 = 20)**

1. Structure of tRNA.
2. Lead poisoning.
3. Secondary hyperuricemias.
4. Draw normal protein electrophoretic pattern.
5. Secondary structure of proteins.
6. Classification of aminoacids based on metabolic fate.
7. Hartnup’s disease.
8. Microalbuminuria and its importance.
9. Reactive oxygen species.
10. DNA fingerprinting.

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[LP 505] AUGUST 2019 **Sub.Code : 5056**

M.B.B.S. DEGREE EXAMINATION
FIRST YEAR
PAPER VI – BIOCHEMISTRY - II

Q.P. Code: 525056

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

Answer All Questions

I. Essay: **(1 x 10 = 10)**

1. Explain the biochemical basis of clinical features of porphyrias.

II. Write notes on: **(5 x 4 = 20)**

1. Mutation.
2. Types, properties and functions of different classes of immunoglobulins.
3. Congenital jaundice.
4. Genomic library.
5. Products formed from tryptophan.

III. Short answers on: **(10 x 2 = 20)**

1. Tests to assess biosynthetic function of liver.
2. Splicing of hnRNA (hetero nuclear RNA).
3. Give the normal values (reference interval) for the following parameters in blood/serum.

   a) Creatinine b) Potassium c) TSH d) pH
4. Compare promoter with enhancer.
5. Role of anti diuretic hormone in the regulation of osmolality.
6. Role of different types of RNA in protein synthesis.
7. Hemoglobin electrophoresis of 2 year old boy with severe anemia showed elevated levels of HbF and HbA2 without any HbA. How will you interpret this?
8. Name four conditions in which Albumin: Globulin ratio is reversed and state the reason for the reversal.
9. What are the laboratory tests done for diagnosis of adrenal hypofunction and hyperfunction?
10. Give two examples for xenobiotic metabolism acting on endogenous substance.

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[LP 505] NOVEMBER 2019 **Sub.Code : 5056**

M.B.B.S. DEGREE EXAMINATION
FIRST YEAR
PAPER VI – BIOCHEMISTRY - II

Q.P. Code: 525056

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

Answer All Questions

I. Essay: **(1 x 10 = 10)**

1. Describe the primary, secondary, tertiary and quatenary structure of proteins.

II. Write notes on: **(5 x 4 = 20)**

1. Renal function tests.
2. Metabolism of catecholamines.
3. Metabolic alterations induced by alcohol metabolism.
4. Functions of proteins and enzymes involved in DNA replication.
5. Tests done to assess biosynthetic functions of liver.

III. Short answers on: **(10 x 2 = 20)**

1. Cystinuria.
2. Transamination.
3. Principle of electrophoresis technique.
4. Four synthetic analogues of purine and pyrimidine bases used as therapeutic agent.
5. DNA finger printing.
6. Oxygen dissociation curve of hemoglobin.
7. Markers of cholestasis.
8. Henderson - Hasselbalch equation.
9. Laboratory diagnosis of multiple myeloma.
10. Mechanism of action of allopurinol.

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[LR 505] AUGUST 2020 **Sub.Code : 5056**

M.B.B.S. DEGREE EXAMINATION
FIRST YEAR
PAPER VI – BIOCHEMISTRY - II

Q.P. Code: 525056

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

Answer All Questions

I. Essay: **(1 x 10 = 10)**

1. Write in details about the Importance, Applications and Steps of Polymerase Chain Reaction.

II. Write notes on: **(5 x 4 = 20)**

1. Collagen
2. ABG and Interpretation of Results
3. Genetic Code
4. a) Name the Enzyme defect in Classical phenyl Ketonuria
   b) Clinical features of PKU c) Name 2 test to detect PKU
5. Cytochrome P 450 enzyme systems- Functions and Properties like Induction by drugs

III. Short answers on: **(10 x 2 = 20)**

1. Name 2 lab test to detect sickle cell disease.
2. Name 2 differences of B form and A form DNA
3. a) Normal Creatinine clearance value in Adult
   b) One condition associated with increased Creatinine clearance
4. Form of Folic Acid involved in Purine Synthesis
5. a) Normal reference range of a) Blood Urea b) Serum Creatinine
   c) Urea / Creatinine Ratio d) 24 hours urinary excretion of creatinine in adult.
6. a) Expand RFLP b) Clinical uses of RFLP
7. Name 2 markers of obstructive of Jaundice.
8. Name 2 post translational modification
9. Name 2 Antioxidant enzymes
10. a) Mineral Required for DNA Polymerase activity b) Rifampian Blocks _____ of Transcription process.

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[LT 505] NOVEMBER 2020 **Sub.Code :5056**

M.B.B.S. DEGREE EXAMINATION
FIRST YEAR
PAPER VI – BIOCHEMISTRY - II

Q.P. Code: 525056

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

Answer All Questions

I. Essay: **(1 x 10 = 10)**

1. Name the Plasma Proteins. Explain the role of Albumin and other Transport Proteins.

II. Write notes on: **(5 x 4 = 20)**

1. DNA Repair Mechanisms.
2. Normal level of Sodium and Potassium and add a note on causes and clinical features of Hyponatremia.
3. Balanced Diet and Glycemic Index.
4. Proteinuria –Types and Characteristic Protein present in urine in each type.
5. Gene Therapy.

III. Short answers on: **(10 x 2 = 20)**

1. Name one disease related to point Mutations.
2. Name 2 enzymes of Pancreatic injury.
3. Uric Acid levels in a) Male b) Female.
4. Write formula to calculate Anion gap.
5. BMI value in a) Normal Individual b) Obesity.
6. Restriction Endo nuclear sticky – Meaning.
7. Name the defect Dubin – Johnson syndrome.
8. Name the Amino Acids involved in Polyamines.
9. Name 2 Anti Oxidant Vitamins, 1 Anti Oxidant Mineral.
10. Role of poly ‘A’ Tail.

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[MBBS 0821] AUGUST 2021 **Sub.Code :5056**

M.B.B.S. DEGREE EXAMINATION
FIRST YEAR
PAPER VI – BIOCHEMISTRY - II

Q.P. Code: 525056

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

Answer All Questions

I. Essay: **(1 x 10 = 10)**

1. Explain in detail the formation, transport and excretion of ammonia in our body.

II. Write notes on: **(5 x 4 = 20)**

1. Gout.
2. Precipitation reactions of protein.
3. Acute intermittent porphyria.
4. Renal tubular function test.
5. Creatinine.

III. Short answers on: **(10 x 2 = 20)**

1. A:G ratio – normal value and significance.
2. Draw Watson Crick model of DNA.
3. Wobble hypothesis.
4. Albinism.
5. Define transamination reaction. Give 2 examples.
6. Name any two antimetabolites and write their use.
7. Name any 4 products derived from glycine.
8. Glutathione.
9. Draw cell cycle.
10. MSUD.

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THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY

[MBBS 0222] FEBRUARY 2022 **Sub.Code :5056**

M.B.B.S. DEGREE EXAMINATION
(For the candidates admitted from the Academic Year 2018-2019)
FIRST YEAR
PAPER VI – BIOCHEMISTRY - II

Q.P. Code: 525056

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

Answer All Questions

I. Essay: **(1 x 10 = 10)**

1. Write a detailed essay about degradation of Heme and classify different types of Hyperbilirubinemia.

II. Write notes on: **(5 x 4 = 20)**

1. Post transcriptional modification of mRNA in eukaryotes.
2. DNA – Repair mechanism with clinical examples.
3. Conjugation reaction of detoxification
4. Inhibitors of DNA replication.
5. Urea cycle defects.

III. Short answers on: **(10 x 2 = 20)**

1. Write the biochemical basis and types of thalassemia.
2. Mention any 4 products derived from tyrosine?
3. Name any 4 function of albumin.
4. SAM.
5. Meister's cycle.
6. Cystinuria.
7. Salvage pathway of purine nucleotides.
8. Name the physiological buffers in our body.
9. Orotic aciduria.
10. Role of glutathione peroxidase.

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THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY

[MBBS 0822] **AUGUST 2022** **Sub. Code :5056**

M.B.B.S. DEGREE EXAMINATION

(For the candidates admitted upto the Academic Year 2018-2019)

FIRST YEAR

PAPER VI – BIOCHEMISTRY - II

Q.P. Code: 525056

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

Answer All Questions

I. Essay: **(1 x 10 = 10)**

1. Describe in detail the process of replication in Eukaryotes with suitable diagram.

II. Write notes on: **(5 x 4 = 20)**

1. Specialised products from Arginine.
2. Role of kidneys in acid base balance.
3. Applications of Polymerase Chain Reaction (PCR).
4. Congenital Jaundice.
5. Phenylketonuria.

III. Short answers on: **(10 x 2 = 20)**

1. What are Antioxidants? Give examples.
2. Ceruloplasmin.
3. Variegate Porphyria.
4. Acute phase proteins.
5. What is anion gap? How is it calculated?
6. What are Phase II detoxification reactions? Give examples.
7. Causes of Secondary gout.
8. Telomerase.
9. Name the post-translational modifications.
10. Immunoglobulin M (IgM).

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THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY

[MBBS 0123] **JANUARY 2023** **Sub. Code :5056**

M.B.B.S. DEGREE EXAMINATION

(For the candidates admitted from the Academic Year 2018-2019)

FIRST YEAR

PAPER VI – BIOCHEMISTRY - II

Q.P. Code: 525056

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

Answer All Questions

I. Essay: **(1 x 10 = 10)**

1. Explain the process of replication in a prokaryotes with suitable diagram. Add a note on the differences between bacterial and Mammalian DNA polymerase.

II. Write notes on: **(5 x 4 = 20)**

1. Disorders of urea cycle.
2. Describe the products derived from tyrosine.
3. Metabolic acidosis.
4. Phase I Detoxification reactions.
5. Write about the factors affecting calcium absorption and add a note on functions of calcium.

III. Short answers on: **(10 x 2 = 20)**

1. Zinc deficiency diseases.
2. Isoelectric pH.
3. Products derived from Methionine.
4. Name the detoxification functions of the liver.
5. Formula for calculating creatinine clearance.
6. Write the normal pH of blood and mention buffers in body fluids.
7. Types of chromatography.
8. Name the enzyme deficient in Lesch Nyhan syndrome and mention two clinical features.
9. Name four hormones that act via intracellular receptors.
10. Any four synthetic nucleotide analogues.

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THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY

[MBBS 0323] **MARCH 2023** **Sub. Code :5056**

M.B.B.S. DEGREE EXAMINATION

(For the candidates admitted from the Academic Year 2018-2019)

FIRST YEAR

PAPER VI – BIOCHEMISTRY - II

Q.P. Code: 525056

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

Answer All Questions

I. Essay: **(1 x 10 = 10)**

1. What is the normal pH of blood? Write in detail about the hydrogen ion homeostasis in our body. Add a note on Anion Gap.

II. Write notes on: **(5 x 4 = 20)**

1. DNA polymerase.
2. Polymerase chain reaction (PCR).
3. Hypokalemia.
4. Characteristics of genetic code.
5. Specialised products of Tryptophan.

III. Short answers on: **(10 x 2 = 20)**

1. Write the reference range for i) Bilirubin, ii) Alanine Transaminase (ALT).
2. Tyrosinemia.
3. GABA (Gamma Amino Butyric Acid).
4. Any four causes of Hemolytic Jaundice.
5. Immunoglobulin E (IgE).
6. Name the vectors used in cloning.
7. What is point mutation? Give an example.
8. Any two posttranslational modifications.
9. Causes of Primary Gout.
10. Peptide bond.

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THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY

[MBBS 0824] **AUGUST 2024** **Sub. Code :5056**

M.B.B.S. DEGREE EXAMINATION

(For the candidates admitted upto the Academic Year 2018-2019)

FIRST YEAR

PAPER VI – BIOCHEMISTRY – II

Q.P. Code: 525056

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

Answer All Questions

I. Essay: **(1 x 10 = 10)**

1. Explain the steps involved in catabolism of Phenylalanine and add a note on phenylketonuria.

II. Write notes on: **(5 x 4 = 20)**

1. Brief the causes and features of respiratory alkalosis.
2. Brief the operon concept of gene Regulation.
3. Metabolic functions of glycine.
4. Post transcriptional modifications.
5. Explain the principle, procedure and clinical application of Electrophoresis.

III. Short answers on: **(10 x 2 = 20)**

1. Characteristics of a peptide bond.
2. Fluoride toxicity.
3. Any four reactive oxygen species with one reaction.
4. Clinically important enzymes in myocardial infarction.
5. Secondary causes of Hyperuricaemia.
6. Normal urea and creatinine clearance.
7. Write any four causes of Increased Anion gap.
8. Alkaptonuria.
9. Gene therapy.
10. Name the hormones that act through cAMP as second messengers.

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THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY

[MBBS 0924] **SEPTEMBER 2024** **Sub. Code :5056**

M.B.B.S. DEGREE EXAMINATION

For the candidates admitted upto the Academic Year 2018-2019)

FIRST YEAR - SUPPLEMENTARY

PAPER VI – BIOCHEMISTRY - II

Q.P. Code: 525056

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

Answer All Questions

I. Essay: **(1 x 10 = 10)**

1. Write in detail about Ammonia production, transport and disposal. Add a note on disorders of Urea cycle.

II. Write notes on: **(5 x 4 = 20)**

1. Properties of Genetic Code.
2. Homocystinuria.
3. Secondary structure of proteins.
4. Test to assess Excretory functions of Liver.
5. Respiratory Acidosis.

III. Short answers on: **(10 x 2 = 20)**

1. Hartnup's disease.
2. Any two Nucleotide analogues and their use.
3. Enzymes as tumour makers.
4. Restriction Endonuclease.
5. Okasaki fragment.
6. Orotic aciduria.
7. S-Adenosyl Methionine.
8. Any two examples of Acute Phase Proteins and use.
9. Replication fork.
10. Alkaline Phosphatase.

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THE TAMIL NADU Dr. M.G.R. MEDICAL UNIVERSITY

[MBBS 0825] **AUGUST 2025** **Sub. Code :5056**

M.B.B.S. DEGREE EXAMINATION

For the candidates admitted upto the Academic Year 2018-2019)

FIRST YEAR

PAPER VI – BIOCHEMISTRY - II

Q.P. Code: 525056

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

Answer All Questions

I. Essay: **(1 x 10 = 10)**

1. Regulation of Gene expression in prokaryotes and Eukaryotes.

II. Write notes on: **(5 x 4 = 20)**

1. Hyperuricemia.
2. Thyroid function tests.
3. Types and Functions of Different Types of RNA.
4. Lac operon concept of gene regulation.
5. Role of Methionine.

III. Short answers on: **(10 x 2 = 20)**

1. Write the biochemical basis in Sickle Cell Anemia.
2. Write the normal and diabetic range of fasting, post prandial and Random blood glucose levels.
3. Okazaki Fragments.
4. Gene therapy.
5. Types of Porphyria.
6. Hartnup’s Disease.
7. Lesch-Nyhan Syndrome.
8. Mucosal block theory of Iron absorption.
9. Importance of Topo Isomerase.
10. Alkaptonuria.

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THE TAMIL NADU Dr. M.G.R. MEDICAL UNIVERSITY

[MBBS 1025] **OCTOBER 2025** **Sub. Code :5056**

M.B.B.S. DEGREE EXAMINATION

For the candidates admitted upto the Academic Year 2018-2019)

FIRST YEAR - SUPPLEMENTARY

PAPER VI – BIOCHEMISTRY - II

Q.P. Code: 525056

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

Answer All Questions

I. Essay: **(1 x 10 = 10)**

1. Describe about liver function test in detail.

II. Write notes on: **(5 x 4 = 20)**

1. Brief how Ammonia is converted to urea?
2. Types, properties and function of different classes of immunoglobulins.
3. Waston and Crick model of DNA structure.
4. Post Transcriptional modification.
5. Sickle cell anaemia.

III. Short answers on: **(10 x 2 = 20)**

1. Denaturation of proteins.
2. Oxygen dissociation curve of hemoglobin.
3. Phenylketonuria.
4. Principle of chromatography technique.
5. Four functions of albumin.
6. Orotic aciduria.
7. Name different types of DNA repair mechanism with suitable examples.
8. Causes of Respiratory acidosis.
9. Types of Phenylketonuria.
10. Products derived from Glycine.

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