[MBBS 0221] **FEBRUARY 2021** **Sub.Code :6056**

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

Q.P. Code: 526056

Time: Three hours **Maximum: 100 Marks (80 Theory + 20MCQs)**

Answer All Questions

I. Essay: **(2 x 15 = 30)**

1. What is the normal pH of blood? Discuss how the pH of blood is maintained.
2. Discuss the metabolism of Phenylalanine. Write a note on the inborn error associated with Phenylalanine.

II. Write notes on: **(10 x 5 = 50)**

1. Compounds derived from Glycine and their functions.
2. Hyperammonemias.
3. Copper metabolism and its applied aspects.
4. Telomerase and its application.
5. Lesch-Nyhan syndrome.
6. Inhibitors of Purine nucleotide biosynthesis.
7. Metabolic Acidosis.
8. Absorption of dietary Iron.
9. Biochemical features of Cancer cells.
10. Conjugation reactions in Xenobiotics.

[MBBS 0821] AUGUST 2021 **Sub.Code :6056**

MAY 2021 SUPPLEMENTRY

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

Q.P. Code: 526056

Time: Three hours **Maximum : 100 Marks (80 Theory + 20MCQS)**

Answer All Questions

I. Essay: **(2 x 15 = 30)**

1. Describe the process of replication in Prokaryotes? Add a note on inhibitors of DNA Replication?
2. Explain the catabolic pathways of Tyrosine and disorders associated with Tyrosine metabolism?

II. Write notes on: **(10 x 5 = 50)**

1. Brief the functions and diagnostic importance of plasma proteins present in the beta region of electrophoretic pattern?
2. Mention the causes, signs, symptoms and treatment of Hypokalemia?
3. Explain the precipitation reactions of protein?
4. Describe the DNA repair mechanisms with suitable clinical examples?
5. Explain the role of Kidney in regulation of pH?
6. Mention the sources, recommended dietary allowance, function and deficiency manifestation of Copper.
7. Brief the causes, symptoms and treatment of Gout?
8. Applications of DNA recombinant technology.
9. Brief the in vitro thyroid function tests.
10. Explain the cellular signaling and defense mechanism of free radicals?

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

[MBBS 0222] FEBRUARY 2022 **Sub.Code : 6056**

M.B.B.S. DEGREE EXAMINATION

(For the candidates admitted from the Academic Year 2019-2020)

FIRST YEAR

PAPER II – BIOCHEMISTRY

Q.P. Code: 526056

Time: Three hours **Maximum : 100 Marks (80 Theory + 20MCQs)**

Answer All Questions

I. Essay: **(2 x 15 = 30)**

1. Write an essay on Recombinant DNA technology. What are the important applications of the technique ?

2. Enumerate liver function tests with their clinical significance.

II. Write notes on: **(10 x 5 = 50)**

1. Potassium.
2. Blotting techniques.
3. Tumour markers.
4. Role of kidney in the regulation of pH.
5. Albumin.
6. Gout.
7. Nitric oxide.
8. Branched chain amino acids.
9. Hypocalcemia.
10. Post translational modification.

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

[MBBS 0522] **MAY 2022** **Sub. Code :6056**

M.B.B.S. DEGREE EXAMINATION

(For the candidates admitted from the Academic Year 2019-2020)

FIRST YEAR – SUPPLEMENTARY (CBME)

PAPER II – BIOCHEMISTRY

Q.P. Code: 526056

Time: Three hours **Maximum : 100 Marks (80 Theory + 20MCQs)**

Answer All Questions

I. Essay: **(2 x 15 = 30)**

1. Describe the phases of activation, initiation, elongation and termination of biosynthesis of protein. Add a note on its inhibitors.

2. Describe in detail about Thyroid function tests.

II. Write notes on: **(10 x 5 = 50)**

1. Respiratory acidosis.
2. Creatinine clearance test.
3. Fluorosis.
4. Primary structure of protein.
5. ELISA.
6. Transmethylation reaction.
7. Glutamine.
8. Collagen.
9. Hyponatremia.
10. Post transcriptional modification.

****

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

[MBBS 0123] JANUARY 2023 Sub. Code : 6056

M.B.B.S. DEGREE EXAMINATION
(For the candidates admitted from the Academic Year 2019-2020)
FIRST YEAR – (CBME)
PAPER II – BIOCHEMISTRY
Q.P. Code: 526056

Time: Three hours **Maximum : 100 Marks (80 Theory + 20MCQs)**

Answer All Questions

I. Essay: **(2 x 15 = 30)**

1. Write in detail about the initiation, elongation and termination of transcription. Give an account of post transcriptional processing.
2. A 40 year old woman complains of tiredness and appears pale. She is experiencing a heavy and prolonged menstrual flow. Blood investigation shows decreased haemoglobin and microcytic hypochromic Red Blood Cells.
   a) What are the causes of Anaemia?
   b) Describe in detail about Iron homeostasis.
   c) How will you diagnose and treat Iron deficiency?

II. Write notes on: **(10 x 5 = 50)**

1. Synthesis and mechanism of action of Nitric Oxide.
2. Homocystinurias.
3. Hyperuricemias.
4. Normal Anion gap and High Anion gap metabolic acidosis.
5. Phase Two detoxification.
6. Special products formed from Glycine.
7. A 24 year old physiotherapist consulted his general practioner because of excessive sweating and was also concerned that his eyes seemed to have become more prominent and that he had lost weight recently although his appetite was normal. He also complained of palpitation. On examination, his doctor observed that his pulse rate was 100 / min at rest and that he had a slightly enlarged thyroid gland. Serum TSH: < 0.1 mIU/ mL (0.3 – 5 μIU/mL), Free T_4:3.2 ng/ dL (0.8 – 2.7 ng/dL) Free T_3: 880 pg/ dL (210- 440 pg/dL).
   a) What is your diagnosis? Justify.
   b) What is the cause of tachycardia in this condition?
   c) What is the explanation for the eye prominence in this condition?
8. Electrophoresis.
9. Antioxidants.
10. A 42 year old male was diagnosed with poorly differentiated adenocarcinoma. A family counselling revealed that the proband had five family members with colorectal cancer diagnosed before 45 years of age. Hence all family members were counselled that this would have been caused by a defect of DNA repair and that all family members older than 25 years should undergo regular colonoscopic examination.
    a) What are the different DNA repair mechanisms? Which repair defect causes Hereditary Non polyposis Colon Cancer (HNPCC)? Describe in detail about the repair mechanism.

****