[LJ 653] AUGUST 2016 **Sub. Code:4202**

FIRST YEAR B.D.S. DEGREE EXAM

PAPER II – GENERAL HUMAN PHYSIOLOGY AND BIOCHEMISTRY

Q.P Code*: *544202

Time: 180 Minutes **Maximum: 70 Marks**

Draw Suitable diagrams wherever necessary
Answer section A and B in Separate Answer Books

SECTION – A
(GENERAL HUMAN PHYSIOLOGY)

I. Elaborate on: **(1 x 10 = 10)**

1. What is Erythropoiesis? Describe the various stages in the development of RBC. Mention the factors needed for erythropoiesis.

II. Write Notes on: **(5 x 5 = 25)**

1. Conducting system of the heart.
2. Write phases of endometrial cycle.
3. Hypoxia and its types.
4. Actions of Glucocorticoids.
5. Functions of hypothalamus.

SECTION – B
(BIOCHEMISTRY)

I. Elaborate on: **(1 x 10 = 10)**

1. What is the normal serum calcium level? Elaborate on the maintenance of calcium homeostasis.

II. Write Notes on: **(5 x 5 = 25)**

1. Polysaccharides.
2. Competitive Inhibition.
3. Essential aminoacids.
4. Scurvy.
5. Jaundice.

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[LK 653] FEBRUARY 2017 **Sub. Code:4202**

FIRST YEAR B.D.S. DEGREE EXAM

PAPER II – GENERAL HUMAN PHYSIOLOGY AND BIOCHEMISTRY

Q.P Code*: *544202

Time: 180 Minutes **Maximum: 70 Marks**

Draw Suitable diagrams wherever necessary
Answer section A and B in Separate Answer Books

SECTION – A
(GENERAL HUMAN PHYSIOLOGY)

I. Elaborate on: **(1 x 10 = 10)**

1. Define cardiac output. Describe factors regulating it. Add a note on measurement of cardiac output.

II. Write Notes on: **(5 x 5 = 25)**

1. Erythrocyte sedimentation rate.
2. Heart Sounds.
3. Composition and functions of Saliva.
4. Vital capacity.
5. Ovulation.

SECTION – B
(BIOCHEMISTRY)

I. Elaborate on: **(1 x 10 = 10)**

1. Explain beta oxidation of fatty acids with its energetics.

II. Write Notes on: **(5 x 5 = 25)**

1. Functions, sources and diseases of thiamine deficiency.
2. Complications of Diabetes Mellitus.
3. Serum calcium regulation.
4. Gout.
5. Essential amino acids.

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[LL 653] AUGUST 2017 **Sub. Code:4202**

FIRST YEAR B.D.S. DEGREE EXAM

PAPER II – GENERAL HUMAN PHYSIOLOGY AND BIOCHEMISTRY

Q.P Code*: *544202

Time: 180 Minutes **Maximum: 70 Marks**

Draw Suitable diagrams wherever necessary
Answer section A and B in Separate Answer Books

SECTION – A
(GENERAL HUMAN PHYSIOLOGY)

I. Elaborate on: **(1 x 10 = 10)**

1. Enumerate the hormones secreted by anterior pituitary gland. Describe the actions of growth hormone.

II. Write Notes on: **(5 x 5 = 25)**

1. Classification of Anaemia.
2. Spermatogenesis.
3. Functions of thalamus.
4. Lead II ECG.
5. Contraception.

SECTION – B
(BIOCHEMISTRY)

I. Elaborate on: **(1 x 10 = 10)**

1. Name the water soluble vitamins. Describe the deficiency manifestations of vitamin C, vitamin A and vitamin D in detail.

II. Write Notes on: **(5 x 5 = 25)**

1. Any two enzymes of diagnostic significance.
2. Phospholipids.
3. Significance of HMP shunt pathway.
4. Regulation of plasma calcium level.
5. Genetic code.

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[LM 653] FEBRUARY 2018 **Sub. Code: 4202**

FIRST YEAR B.D.S. DEGREE EXAM

PAPER II – GENERAL HUMAN PHYSIOLOGY AND BIOCHEMISTRY

Q.P Code*: *544202

Time: 180 Minutes **Maximum: 70 Marks**

Draw Suitable diagrams wherever necessary
Answer section A and B in Separate Answer Books

SECTION – A
(GENERAL HUMAN PHYSIOLOGY)

I. Elaborate on: **(1 x 10 = 10)**

1. Define cardiac cycle. Describe the mechanical events of cardiac cycle.

II. Write Notes on: **(5 x 5 = 25)**

1. Erythroblastosis fetalis.
2. ABO Blood group system.
3. Write a note on Glomerular Filtration Rate (GFR).
4. Coronary circulation.
5. Types of Hypoxia.

SECTION – B
(BIOCHEMISTRY)

I. Elaborate on: **(1 x 10 = 10)**

1. Write down the normal calcium and phosphorus levels. Describe the functions of calcium, phosphorus and vitamin D in detail.

II. Write Notes on: **(5 x 5 = 25)**

1. Glycogen storage diseases.
2. Isoenzymes.
3. Plasmalipoproteins.
4. Any two inborn errors of amino acid metabolism.
5. Liver function tests.

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[LN 653] AUGUST 2018 **Sub. Code: 4202**

FIRST YEAR B.D.S. DEGREE EXAM

PAPER II – GENERAL HUMAN PHYSIOLOGY AND BIOCHEMISTRY

Q.P Code*: *544202

Time: 180 Minutes **Maximum: 70 Marks**

Draw Suitable diagrams wherever necessary
Answer section A and B in Separate Answer Books

SECTION – A
(GENERAL HUMAN PHYSIOLOGY)

I. Elaborate on: **(1 x 10 = 10)**

1. Define menstrual cycle. Explain the Endometrial and ovarian changes during menstrual cycle.

II. Write Notes on: **(3 x 5 = 15)**

1. Factors affecting Erythropoiesis.
2. Conducting system of heart.
3. Trace the pain pathway.

III. Short answers: **(5 x 2 = 10)**

1. Sarcomere.
2. Action potential.
3. Function of growth hormone.
4. Name the various respiratory centres.
5. Receptors for vision.

SECTION – B
(BIOCHEMISTRY)

I. Elaborate on: **(1 x 10 = 10)**

1. Normal Blood Glucose level. List out the Hormones Regulate Blood Glucose level. Add Notes on Diabetes Mellitus.

II. Write Notes on: **(3 x 5 = 15)**

1. Ascorbic Acid.
2. Lipid profiles – significance of Cholesterol.
3. Fluorosis.

III. Short answers: **(5 x 2 = 10)**

1. Significance of transfer RNA.
2. Gout.
3. Substances level elevated in Renal diseases and their normal values.
4. Definition of Genetic code.
5. Specialized products formed from Tyrosine.

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[LO 653] **FEBRUARY 2019** **Sub. Code: 4202**

FIRST YEAR B.D.S. DEGREE EXAM

PAPER II – GENERAL HUMAN PHYSIOLOGY AND BIOCHEMISTRY

Q.P Code*: *544202

Time: 180 Minutes **Maximum: 70 Marks**

Draw Suitable diagrams wherever necessary
Answer section A and B in Separate Answer Books

SECTION – A
(GENERAL HUMAN PHYSIOLOGY)

I. Elaborate on: **(1 x 10 = 10)**

1. Define Blood Pressure. Describe the factors maintaining Blood Pressure. Add a note on short term regulation of Blood Pressure.

II. Write Notes on: **(3 x 5 = 15)**

1. Composition and function of saliva.
2. Describe the structure of neuromuscular junction.
3. Explain Oxygen Hemoglobin Dissociation curve.

III. Short answers: **(5 x 2 = 10)**

1. Erythrocyte Sedimentation Rate.
2. Cretinism and Dwarfism.
3. Functions of Liver.
4. Draw a labelled diagram of a simple reflex arc.
5. Name two Anti-Coagulant

SECTION – B
(BIOCHEMISTRY)

I. Elaborate on: **(1 x 10 = 10)**

1.What is the normal level of Blood Urea? Describe the synthesis of Urea and add a note on Metabolic disorders associated with Urea Cycle.

II. Write Notes on: **(3 x 5 = 15)**

1. Define and Name Polysaccharides.
2. Mutation.
3. Deficiency Manifestation of Vitamin A.

III. Short answers: **(5 x 2 = 10)**

1. Essential Amino Acids.
2. Essential Fatty Acids.
3. Enzymes – clinically Important (Any two with their normal values and clinical significance).
4. Reducing property of sugar.
5. Examples for Dietary Fibers.

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[LP 653] AUGUST 2019 **Sub. Code: 4202**

FIRST YEAR B.D.S. DEGREE EXAM

PAPER II–GENERAL HUMAN PHYSIOLOGY AND BIOCHEMISTRY

Q.P Code*: *544202

Time: 180 Minutes **Maximum: 70 Marks**

Draw Suitable diagrams wherever necessary
Answer section A and B in Separate Answer Books

SECTION – A
(GENERAL HUMAN PHYSIOLOGY)

I. Elaborate on: **(1 x 10 = 10)**

1. Define Hemostasis. Discuss blood coagulation in detail.

II. Write Notes on: **(3 x 5 = 15)**

1. Stages of Deglutition with a diagram.
2. Transport of carbon-di-oxide.
3. Contraception in females.

III. Short answers: **(5 x 2 = 10)**

1. State Bell Magendie law.
2. Draw a neatly labeled diagram of ECG and causes of each wave.
3. Mention any two functions of plasma proteins.
4. Mention any two peculiarities of renal circulation.
5. What is meant by Proprioception? What are the receptors for Proprioception?

SECTION – B
(BIOCHEMISTRY)

I. Elaborate on: **(1 x 10 = 10)**

1. Write in detail about Tricarboxylic Acid Cycle with energetics.

II. Write Notes on: **(3 x 5 = 15)**

1. Dietary fibers and their role in human nutrition.
2. Mucopolysaccharides.
3. Biochemical functions and deficiency manifestations of Vitamin D.

III. Short answers: **(5 x 2 = 10)**

1. Scurvy.
2. Enzymes associated with liver function.
3. Ketosis.
4. Function of tRNA and mRNA.
5. Beri-beri.

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[LQ 653] FEBRUARY 2020 **Sub. Code: 4202**

FIRST YEAR B.D.S. DEGREE EXAM

PAPER II – GENERAL HUMAN PHYSIOLOGY AND BIOCHEMISTRY

Q.P. Code*: *544202

Time: 180 Minutes **Maximum: 70 Marks**

Draw Suitable diagrams wherever necessary
Answer section A and B in Separate Answer Books

SECTION – A
(GENERAL HUMAN PHYSIOLOGY)

I. Elaborate on: **(1 x 10 = 10)**

1. Describe functions of Glucocorticoids. Add a note on Cushing's syndrome.

II. Write Notes on: **(3 x 5 = 15)**

1. Milk Ejection Reflex.
2. Spermatogenesis.
3. Growth hormone.

III. Short answers: **(5 x 2 = 10)**

1. Referred pain.
2. List various methods of measuring cardiac output.
3. Positive feedback mechanism.
4. Oral contraceptives.
5. Dead space.

SECTION – B
(BIOCHEMISTRY)

I. Elaborate on: **(1 x 10 = 10)**

1. How ketone bodies are produced in liver? Describe the utilization of ketone bodies by brain in starvation and diabetic conditions.

II. Write Notes on: **(3 x 5 = 15)**

1. Phospholipids.
2. Clinical significance of liver function tests.
3. Define and classify Jaundice.

III. Short answers: **(5 x 2 = 10)**

1. Synthesis of glucose from amino acids.
2. Antioxidant vitamins.
3. Sodium and potassium.
4. Balanced diet.
5. Rickets.

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[BDS 0321] MARCH 2021 **Sub. Code: 4202**

(AUGUST 2020 SESSION)

FIRST YEAR B.D.S. DEGREE EXAM

PAPER II – GENERAL HUMAN PHYSIOLOGY AND BIOCHEMISTRY

Q.P. Code*: *544202

Time: 180 Minutes **Maximum: 70 Marks**

Draw Suitable diagrams wherever necessary
Answer section A and B in Separate Answer Books

SECTION – A
(GENERAL HUMAN PHYSIOLOGY)

I. Elaborate on: **(1 x 10 = 10)**

1. Define Cardiac Cycle? Describe in detail about the Various Events of Cardiac Cycle.

II. Write Notes on: **(3 x 5 = 15)**

1. Hypoxia.
2. Cerebrospinal Fluid.
3. Movements of Small Intestine.

III. Short answers: **(5 x 2 = 10)**

1. Respiratory Distress Syndrome.
2. Write any two differences between Acromegaly and Gigantism.
3. Xerostomia
4. End Plate Potential.
5. Haemophillia.

SECTION – B
(BIOCHEMISTRY)

I. Elaborate on: **(1 x 10 = 10)**

1. Sources, RDA, Active Forms, Biochemical Functions and Deficiency Manifestation of Ascorbic Acid.

II. Write Notes on: **(3 x 5 = 15)**

1. Structure and Functions of tRNA (With Diagram).
2. ß- Oxidation of Fatty Acids and its Regulation with Significance.
3. Enzymes of Clinical Significance.

III. Short answers: **(5 x 2 = 10)**

1. Normal Level of Sodium, Potassium, Calcium and Phosphorus in Blood.
2. Classify Amino Acids Based on Nutritional Importance.
3. Significance of Genetic Code.
4. Definition and Types of Jaundice.
5. Gout.

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[BDS 0921] SEPTEMBER 2021 **Sub. Code: 4202**

(FEBRUARY 2021 SESSION)

FIRST YEAR B.D.S. DEGREE EXAM

PAPER II – GENERAL HUMAN PHYSIOLOGY AND BIOCHEMISTRY

Q.P. Code*: *544202

Time: 180 Minutes **Maximum: 70 Marks**

Draw Suitable diagrams wherever necessary
Answer section A and B in Separate Answer Books

SECTION – A
(GENERAL HUMAN PHYSIOLOGY)

I. Elaborate on: **(1 x 10 = 10)**

1. Describe the composition and functions of saliva and discuss about regulation salivary secretion.

II. Write Notes on: **(3 x 5 = 15)**

1. Conducting system of the Heart.
2. Surfactant.
3. Functions of Hypothalamus.

III. Short answers: **(5 x 2 = 10)**

1. Maturation factors in Erythropoiesis.
2. Sarcomere.
3. ECG in Lead II.
4. What is Ovulation? Which hormone is called “Hormone of Ovulation”?
5. Receptors for vision and their functions.

SECTION – B
(BIOCHEMISTRY)

I. Elaborate on: **(1 x 10 = 10)**

1. Describe in detail the chemistry, sources, requirements, metabolic functions and deficiency manifestations of Vitamin C.

II. Write Notes on: **(3 x 5 = 15)**

1. Wald’s visual cycle.
2. Competitive and Non – competitive inhibition.
3. Renal Function Tests.

III. Short answers: **(5 x 2 = 10)**

1. Lipotropic factors.
2. Heparin.
3. Pantothenic acid.
4. Selenium.
5. Pellagra.

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

[BDS 0322] **MARCH 2022** **Sub. Code: 4202**

(AUGUST 2021 SESSION)

FIRST YEAR B.D.S. DEGREE EXAM

New Modified Revised Regulation (August 2016 Examination Session onwards)
[Common to Modified Regulation III {Candidates admitted from 2003-2004 to 2007-2008} and New Modified Regulation {Candidates admitted from 2008 – 2009 onwards}]

PAPER II – GENERAL HUMAN PHYSIOLOGY AND BIOCHEMISTRY

Q.P. Code*: *544202

Time: 180 Minutes **Maximum: 70 Marks**

Draw Suitable diagrams wherever necessary
Answer section A and B in Separate Answer Books

SECTION – A
(GENERAL HUMAN PHYSIOLOGY)

I. Elaborate on: **(1 x 10 = 10)**

1. Define Hemostasis. Discuss Blood Coagulation in detail.

II. Write Notes on: **(3 x 5 = 15)**

1. Composition and Functions of Gastric Juice.
2. Draw a Diagram and Explain Impulse Transmission at Neuro Muscular Junction.
3. Actions of Growth Hormone.

III. Short answers: **(5 x 2 = 10)**

1. State Landsteiner's Law.
2. Mention any two functions of Hypothalamus.
3. Draw a labeled diagram of the Juxta – Glomerular Apparatus and Mention its Function.
4. What is Hering – Breuer Reflex and Mention its Significance?
5. What is Presbyopia and how it is corrected?

SECTION – B
(BIOCHEMISTRY)

I. Elaborate on: **(1 x 10 = 10)**

1. Write in detail about Tricarboxylic Acid Cycle with Energetic.

II. Write Notes on: **(3 x 5 = 15)**

1. Gout.
2. Liver Function Test.
3. Classification of Enzymes.

III. Short answers: **(5 x 2 = 10)**

1. Essential Aminoacids.
2. Phenyl Ketonuria.
3. Beri-Beri.
4. Vitamin-E and Vitamin-K.
5. Homopolysaccharides.

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

[BDS 0722] **JULY 2022** **Sub. Code: 4202**

(FEBRUAY 2022 SESSION)

FIRST YEAR B.D.S. DEGREE EXAM

New Modified Revised Regulation (August 2016 Examination Session onwards)
[Common to Modified Regulation III {Candidates admitted from 2003-2004 to 2007-2008} and New Modified Regulation {Candidates admitted from 2008 – 2009 onwards}]

PAPER II – GENERAL HUMAN PHYSIOLOGY AND BIOCHEMISTRY

Q.P. Code*: *544202

Time: 180 Minutes **Maximum: 70 Marks**

Draw Suitable diagrams wherever necessary
Answer section A and B in Separate Answer Books

SECTION – A
(GENERAL HUMAN PHYSIOLOGY)

I. Elaborate on: **(1 x 10 = 10)**

1. Define Glomerular Filtration Rate (GFR). What is the normal value? Discuss the various factors influencing GFR.

II. Write Notes on: **(3 x 5 = 15)**

1. Erythrocyte sedimentation rate (ESR).
2. Spirogram.
3. Refractory errors and corrections.

III. Short answers: **(5 x 2 = 10)**

1. Name any two "in Vivo" Anticoagulanats. How they act?
2. Law of Intestine.
3. Which structure is natural Pacemaker of the Heart?
4. Name the Respiratory centres and their location.
5. Pituitary dwarf and Thyroid Dwarf.

SECTION – B
(BIOCHEMISTRY)

I. Elaborate on: **(1 x 10 = 10)**

1. Write in detail about blood sugar regulation and its disorders.

II. Write Notes on: **(3 x 5 = 15)**

1. Structural organization of proteins.
2. Folic acid.
3. Electron transport chain.

III. Short answers: **(5 x 2 = 10)**

1. Disorders of Purine metabolism.
2. Insulin.
3. Fat soluble vitamins.
4. Copper and Zinc.
5. Alkaptonuria.

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

[BDS 1222] **DECEMBER 2022** **Sub. Code: 4202**

(AUGUST 2022EXAM SESSION)

FIRST YEAR B.D.S. DEGREE EXAM

New Modified Revised Regulation (August 2016 Examination Session onwards)
[Common to Modified Regulation III {Candidates admitted from 2003-2004 to 2007-2008} and New Modified Regulation {Candidates admitted from 2008 – 2009 onwards}]

PAPER II – GENERAL HUMAN PHYSIOLOGY AND BIOCHEMISTRY

Q.P. Code*: *544202

Time: 180 Minutes **Maximum: 70 Marks**

Draw Suitable diagrams wherever necessary
Answer section A and B in Separate Answer Books

SECTION – A
(GENERAL HUMAN PHYSIOLOGY)

I. Elaborate on: **(1 x 10 = 10)**

1. Draw and describe the structure of Neuro Muscular Junction. Describe the events involved in Neuro Muscular Transmission.

II. Write Notes on: **(3 x 5 = 15)**

1. Erythroblastosis Fetalis.
2. Cystometrogram.
3. Functions of Placenta.

III. Short answers: **(5 x 2 = 10)**

1. Micelles.
2. A.V Nodal delay and its significance.
3. Define Pain. Mention its Types.
4. Vital Capacity.
5. Name two Excitatory and two Inhibitory Neurotransmitters.

SECTION – B
(BIOCHEMISTRY)

I. Elaborate on: **(1 x 10 = 10)**

1. What is the normal serum calcium level? Elaborate on the maintenance of calcium homeostasis.

II. Write Notes on: **(3 x 5 = 15)**

1. Glucose Tolerance Test (GTT).
2. Structure and functions of DNA.
3. Iron.

III. Short answers: **(5 x 2 = 10)**

1. Reducing Disaccharides.
2. Fatty liver.
3. Phenyl ketonuria.
4. Vitamin E and K.
5. Sulphur containing Aminoacids.

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

[BDS 0323] **MARCH 2023** **Sub. Code: 4202**

(SEPTEMBER 2022 EXAM SESSION)

FIRST YEAR B.D.S. DEGREE EXAMINATION

New Modified Revised Regulation (August 2016 Examination Session onwards)
[Common to Modified Regulation III {Candidates admitted from 2003-2004 to 2007-2008} and New Modified Regulation {Candidates admitted from 2008 – 2009 onwards}]

PAPER II – GENERAL HUMAN PHYSIOLOGY AND BIOCHEMISTRY

Q.P. Code*: *544202

Time: 180 Minutes **Maximum: 70 Marks**

Draw Suitable diagrams wherever necessary
Answer section A and B in Separate Answer Books

SECTION – A
(GENERAL HUMAN PHYSIOLOGY)

I. Elaborate on: **(1 x 10 = 10)**

1. Define Cardiac output. Describe the factors regulating it. Add a note on measurement of Cardiac output.

II. Write Notes on: **(3 x 5 = 15)**

1. Transport of Carbon dioxide.
2. Explain about Cystometrogram.
3. Functions of Glucocorticoids.

III. Short answers: **(5 x 2 = 10)**

1. Examples for Positive feedback mechanism.
2. What are the types of muscle contraction?
3. Mention any four functions of liver.
4. Referred pain.
5. What is anaemia? What are the types?

SECTION – B
(BIOCHEMISTRY)

I. Elaborate on: **(1 x 10 = 10)**

1. Write in detail the sources, daily requirement, functions and deficiency manifestations of Vitamin C.

II. Write Notes on: **(3 x 5 = 15)**

1. Define Glycolysis. Enumerate how Glucose is completely oxidized.
2. Functions and daily requirement of Calcium.
3. Explain the Urea Cycle and its associated disorder.

III. Short answers: **(5 x 2 = 10)**

1. Name any four Prostaglandins and its clinical significance.
2. Name two inhibitors of oxidative phosphorylation.
3. Brief the features of Genetic Code.
4. What is prehepatic jaundice? Give an example.
5. What is the normal serum level of Cholesterol? Name two biologically important compounds derived from cholesterol.

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

[BDS 1023] OCTOBER 2023 Sub. Code: 4202
(AUGUST 2023 EXAM SESSION)

FIRST YEAR B.D.S. DEGREE EXAMINATION
New Modified Revised Regulation (August 2016 Examination Session onwards)
[Common to Modified Regulation III {Candidates admitted from 2003-2004 to 2007-2008} and New Modified Regulation {Candidates admitted from 2008 – 2009 onwards}]

PAPER II – GENERAL HUMAN PHYSIOLOGY AND BIOCHEMISTRY
Q.P. Code*: *544202

Time: 180 Minutes **Maximum: 70 Marks**

Draw Suitable diagrams wherever necessary
Answer section A and B in Separate Answer Books

SECTION – A
(GENERAL HUMAN PHYSIOLOGY)

I. Elaborate on: **(1 x 10 = 10)**

1. What is Erythropoiesis? Describe the stages in the development of RBC. Mention the factors for regulating Erythropoiesis.

II. Write Notes on: **(3 x 5 = 15)**

1. Peculiarities of renal circulation.
2. Explain the features of hypovolemic shock.
3. Describe Spermatogenesis.

III. Short answers: **(5 x 2 = 10)**

1. Define Action Potential.
2. List the Non respiratory functions of lung.
3. Draw a labelled diagram of neuron.
4. What is Cretinisim?
5. Mention the stages of Deglutition.

SECTION – B
(BIOCHEMISTRY)

I. Elaborate on: **(1 x 10 = 10)**

1. Write in detail the sources, daily requirement, functions and deficiency manifestations of Vitamin B 12.

II. Write Notes on: **(3 x 5 = 15)**

1. a) Brief the significance of HMP stunt.
   b) Flurosis.
2. Tabulate the disorders of Urea Cycle with affected enzyme.
3. Define-Nutrition and explain the different types of Mutation.

III. Short answers: **(5 x 2 = 10)**

1. What are Eicosanoids? Give an example.
2. Explain suicide inhibition of Enzyme with an example.
3. Name two enzymes that are elevated in Myocardial infarction.
4. What is post Hepatic jaundice? Give an example.
5. How is Tyrosine produced in the body? Name two biologically important compounds derived from Tyrosine.

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

[BDS 1223] **DECEMBER 2023** **Sub. Code: 4202**

FIRST YEAR B.D.S. DEGREE EXAMINATION

New Modified Revised Regulation (August 2016 Examination Session onwards)
[Common to Modified Regulation III {Candidates admitted from 2003-2004 to 2007-2008} and New Modified Regulation {Candidates admitted from 2008 – 2009 onwards}]

PAPER II – GENERAL HUMAN PHYSIOLOGY AND BIOCHEMISTRY

Q.P. Code*: *544202

Time: 180 Minutes **Maximum: 70 Marks**

Draw Suitable diagrams wherever necessary
Answer section A and B in Separate Answer Books

SECTION – A
(GENERAL HUMAN PHYSIOLOGY)

I. Elaborate on: **(1 x 10 = 10)**

1. Explain the mechanism of secretion of HCL and briefly write about its regulation.

II. Write Notes on: **(3 x 5 = 15)**

1. List the actions of Thyroxine.
2. Define Hypoxia. Discuss the features of different types of Hypoxia.
3. What is Referred pain? What are the theories of Referred pain?

III. Short answers: **(5 x 2 = 10)**

1. What is Diffusion? What are the two types of diffusion?
2. What are plasma proteins? Mention its function.
3. Name two Anti-coagulant.
4. Mention two uses of Electrocardiogram.
5. Mention the components of Juxta glomerular apparatus.

SECTION – B
(BIOCHEMISTRY)

I. Elaborate on: **(1 x 10 = 10)**

1.Explain the steps of DNA Replication in Prokaryotes.

II. Write Notes on: **(3 x 5 = 15)**

1. Glutathione.
2. Isoenzymes.
3. Brief about a) Refsum's disease b) Galactosemia.

III. Short answers: **(5 x 2 = 10)**

1. Which organ produces Urea and what is the normal Blood urea level.
2. Write four investigations done in Diabetes mellitus.
3. What is the normal Blood pH and one cause for metabolic alkalosis.
4. Write the Inhibitors of Electron transport chain.
5. Name the different Lipoproteins.

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

[BDS 0624] **JUNE 2024** **Sub. Code: 4202**

FIRST YEAR B.D.S. DEGREE EXAMINATION

New Modified Revised Regulation (August 2016 Examination Session onwards)
[Common to Modified Regulation III {Candidates admitted from 2003-2004 to 2007-2008} and New Modified Regulation {Candidates admitted from 2008 – 2009 onwards}]

PAPER II – GENERAL HUMAN PHYSIOLOGY AND BIOCHEMISTRY

Q.P. Code*: *544202

Time: Three Hours **Maximum: 70 Marks**

Answer All Questions in the same order
Draw Suitable diagrams wherever necessary
Answer section A and B in Separate Answer Books

SECTION – A
(GENERAL HUMAN PHYSIOLOGY)

I. Elaborate on: **(1 x 10 = 10)**

1. Define Blood Pressure. Explain in detail about the short term regulation of Blood Pressure.

II. Write Notes on: **(3 x 5 = 15)**

1. Define Phagocytosis. Describe the sequence of events during Phagocytosis.
2. What is Oxygen-haemoglobin dissociation curve? Describe briefly the factors affecting it.
3. Describe the functions of Cerebellum.

III. Short answers: **(5 x 2 = 10)**

1. What is Apoptosis? Mention two physiological significance of Apoptosis.
2. Name the contractile proteins of skeletal muscle.
3. Mention four functions of Saliva.
4. Mention the phases of menstrual cycle.
5. What is Myopia? How is it corrected?

SECTION – B
(BIOCHEMISTRY)

I. Elaborate on: **(1 x 10 = 10)**

1. Write the source requirement, biochemical functions and deficiency manifestations of Vitamin – D.

II. Write Notes on: **(3 x 5 = 15)**

1. Collagen structure and function.
2. tRNA.
3. Write the classification of Phospholipids and brief the functions of Surfactant.

III. Short answers: **(5 x 2 = 10)**

1. Epimers and Anomers.
2. Iodine number.
3. Isoelectric pH.
4. Two applications of PCR.
5. Two causes of Metabolic acidosis.

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

[BDS 0824] **AUGUST 2024** **Sub. Code: 4202**

FIRST YEAR B.D.S. DEGREE EXAMINATION

New Modified Revised Regulation (August 2016 Examination Session onwards)
[Common to Modified Regulation III {Candidates admitted from 2003-2004 to 2007-2008} and New Modified Regulation {Candidates admitted from 2008 – 2009 onwards}]

PAPER II – GENERAL HUMAN PHYSIOLOGY AND BIOCHEMISTRY

Q.P. Code*: *544202

Time: Three Hours **Maximum: 70 Marks**

Answer All Questions in the same order
Draw Suitable diagrams wherever necessary
Answer section A and B in Separate Answer Books

SECTION – A
(GENERAL HUMAN PHYSIOLOGY)

I. Elaborate on: **(1 x 10 = 10)**

1. Enumerate the hormones secreted by thyroid gland. Describe the actions and regulation of Thyroid Hormones.

II. Write Notes on: **(3 x 5 = 15)**

1. Composition and Functions of saliva.
2. Phases of Menstrual cycle.
3. Oxygen Hemoglobin dissociation curve.

III. Short answers: **(5 x 2 = 10)**

1. Draw a neatly labelled diagram of ECG.
2. What is Neuroglia? Mention the types.
3. What is immunity? What are the types of immunity?
4. Mention the stages of Deglutition.
5. Mention the any two non excretory functions of Kidney.

SECTION – B
(BIOCHEMISTRY)

I. Elaborate on: **(1 x 10 = 10)**

1. Write in detail the sources, daily requirement, functions and deficiency manifestations of Iron.

II. Write Notes on: **(3 x 5 = 15)**

1. What is Gluconeogenesis? Enumerate the steps in this pathway.
2. Explain Maple Syrup Urine Disease.
3. Brief the products derived from Glycine.

III. Short answers: **(5 x 2 = 10)**

1. Brief the Salient features of Oxygen Dissociation Curve.
2. Explain Competitive inhibition of enzyme with an example.
3. Name two enzymes that require Biotin for its functioning.
4. What is Hepatic Jaundice? Give an example.
5. What is the normal serum level of total protein? Name two important functions of protein.

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

[BDS 1224] **DECEMBER 2024** **Sub. Code: 4202**

FIRST YEAR B.D.S. DEGREE EXAMINATION

New Modified Revised Regulation (August 2016 Examination Session onwards)

PAPER II – GENERAL HUMAN PHYSIOLOGY AND BIOCHEMISTRY

Q.P. Code*: *544202

Time: Three Hours **Maximum: 70 Marks**

Answer All Questions in the same order
Draw Suitable diagrams wherever necessary
Answer section A and B in Separate Answer Books

SECTION – A
(GENERAL HUMAN PHYSIOLOGY)

I. Elaborate on: **(1 x 10 = 10)**

1. Define Erythropoiesis? Describe the various stages in the development of RBC. Mention the factors needed for erythropoiesis.

II. Write Notes on: **(3 x 5 = 15)**

1. Carbondioxide Transport.
2. Factors determining Glomerular Filtration Rate (GFR).
3. Endometrial changes during menstrual cycle.

III. Short answers: **(5 x 2 = 10)**

1. Classify transport across cell membrane.
2. ECG waves with diagram.
3. Milk ejection reflex.
4. Functions of hypothalamus.
5. What is Diabetes Mellitus? What are the symptoms of Diabetes Mellitus?

SECTION – B
(BIOCHEMISTRY)

I. Elaborate on: **(1 x 10 = 10)**

1. Name the water-soluble vitamins. Describe the sources, RDA, Biochemical functions and deficiency manifestations of Vitamin C.

II. Write Notes on: **(3 x 5 = 15)**

1. mRNA.
2. Gout.
3. Renal Function test.

III. Short answers: **(5 x 2 = 10)**

1. Calcium.
2. Hypokalemia.
3. Essential Fatty Acids.
4. Reducing property of sugar.
5. Examples for Dietary Fibers.

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

[BDS 0225] **FEBRUARY 2025** **Sub. Code: 4202**

B.D.S. DEGREE EXAMINATION

New Modified Revised Regulation (August 2016 Examination Session onwards)
and New Modified Regulation {Candidates admitted from 2008-2009 onwards)

FIRST YEAR

PAPER II – GENERAL HUMAN PHYSIOLOGY AND BIOCHEMISTRY

Q.P. Code*: *544202

Time: Three Hours **Maximum: 70 Marks**

Answer All Questions in the same order
Draw Suitable diagrams wherever necessary
Answer section A and B in Separate Answer Books

SECTION – A
(GENERAL HUMAN PHYSIOLOGY)

I. Elaborate on: **(1 x 10 = 10)**

1. Name the Respiratory centres in brain. Discuss the chemical regulation of Respiration.

II. Write Notes on: **(3 x 5 = 15)**

1. Conducting system of Heart.
2. Counter current mechanism.
3. Draw and describe the structure of the neuromuscular junction.

III. Short answers: **(5 x 2 = 10)**

1. Define Active transport and its types with examples.
2. What is Rh incompatibility? How can we prevent it?
3. Write briefly about the stages of Deglutition.
4. What are the hormones secreted by placenta.
5. Numerical classification of nerve fibers.

SECTION – B
(BIOCHEMISTRY)

I. Elaborate on: **(1 x 10 = 10)**

1. What is the normal level of Blood Urea? Describe the synthesis of Urea and add a note on Metabolic disorders associated with Urea cycle.

II. Write Notes on: **(3 x 5 = 15)**

1. Mutation.
2. Cardiac enzymes.
3. Scurvy.

III. Short answers: **(5 x 2 = 10)**

1. Synthesis of glucose from amino acids.
2. Antioxidant vitamins.
3. Balanced diet.
4. Definition and types of Jaundice.
5. Substrate level phosphorylation.

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

[BDS 0625] **JUNE 2025** **Sub. Code: 4202**

B.D.S. DEGREE EXAMINATION

New Modified Revised Regulation (August 2016 Examination Session onwards)

FIRST YEAR

PAPER II – GENERAL HUMAN PHYSIOLOGY AND BIOCHEMISTRY

Q.P. Code*: *544202

Time: Three Hours **Maximum: 70 Marks**

Answer All Questions in the same order

Draw Suitable diagrams wherever necessary

Answer section A and B in Separate Answer Books

SECTION – A
(GENERAL HUMAN PHYSIOLOGY)

I. Elaborate on: **(1 x 10 = 10)**

1. Define Cardiac cycle. Describe the mechanical events of Cardiac cycle with the help of a diagram.

II. Write Notes on: **(3 x 5 = 15)**

1. Describe the structure and impulse transmission at Neuro-muscular junction.
2. What is Oxygen-haemoglobin dissociation curve? Describe briefly the factors affecting it.
3. Elaborate on the factors regulating Glomerular Filtration Rate (GFR).

III. Short answers: **(5 x 2 = 10)**

1. Mention any two functions of Platelets.
2. Mention any four functions of Hypothalamus.
3. Mention any four functions of Liver.
4. What is Milk Ejection reflex?
5. Define Synapse. Mention any two properties of Synapse.

SECTION – B
(BIOCHEMISTRY)

I. Elaborate on: **(1 x 10 = 10)**

1. Explain the Beta oxidation of palmitic acid. Add a note on its Regulation and Clinical significance.

II. Write Notes on: **(3 x 5 = 15)**

1. Brief about Polymerase chain reaction and its clinical applications.
2. Write in detail the Glomerular functions of the Kidney.
3. Brief the Clinical features, Biochemical defect and Laboratory diagnosis of
   a) Alkaptonuria b) Tyrosinemia Type I.

III. Short answers: **(5 x 2 = 10)**

1. Clinical applications of Lysosomes.
2. Rapoport – Luebering cycle.
3. Brief the causes of Secondary Hyperuricemia.
4. Competitive Enzyme inhibition.
5. Write the normal values of a) Fasting Blood Glucose b) Serum cholesterol
   c) Serum Sodium d) HbA1C.

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

[BDS 0825] **AUGUST 2025** **Sub. Code: 4202**

B.D.S. DEGREE EXAMINATION

New Modified Revised Regulation (August 2016 Examination Session onwards) and New Modified Regulation {Candidates admitted from 2008-2009 onwards})

FIRST YEAR

PAPER II – GENERAL HUMAN PHYSIOLOGY AND BIOCHEMISTRY

Q.P. Code*: *544202

Time: Three Hours **Maximum: 70 Marks**

Answer All Questions in the same order

Draw Suitable diagrams wherever necessary

Answer section A and B in Separate Answer Books

SECTION – A
(GENERAL HUMAN PHYSIOLOGY)

I. Elaborate on: **(1 x 10 = 10)**

1. Enumerate the hormones secreted by anterior pituitary gland. Describe the actions of Growth hormones.

II. Write Notes on: **(3 x 5 = 15)**

1. Define Anaemia. Classify Anaemia based on etiology and morphology.
2. Conducting system of the Heart.
3. Define Hypoxia. Discuss the features of different types of Hypoxia.

III. Short answers: **(5 x 2 = 10)**

1. Primary active transport process with example.
2. Mention the stages of Deglutition.
3. Draw a neatly labelled diagram of ECG in Lead II and causes of each wave.
4. What is Rigor mortis?
5. Write any two functions of Cerebellum.

SECTION – B
(BIOCHEMISTRY)

I. Elaborate on: **(1 x 10 = 10)**

1. Explain the Biosynthesis of Heme. Add a note on Disorders of Heme synthesis.

II. Write Notes on: **(3 x 5 = 15)**

1. Brief about Recombinant DNA technology and its clinical applications.
2. Brief about the substrates of Gluconeogenesis, its regulation and clinical significance.
3. Brief the Clinical features, Biochemical defect and Laboratory diagnosis of
   a) Hartnup's disease b) Albinism.

III. Short answers: **(5 x 2 = 10)**

1. Modifiable and Non-modifiable risk factors of Cardio Vascular disease.
2. Enzyme profile in Liver disease.
3. Causes of Metabolic alkalosis.
4. Brief any four functions of Prostaglandins.
5. Mechanism of ATP synthesis.

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

[BDS 1225] **DECEMBER 2025** **Sub. Code: 4202**

B.D.S. DEGREE EXAMINATION

New Modified Revised Regulation (August 2016 Examination Session onwards)
Candidates admitted for the Academic Year 2022-2023 Batch only

FIRST YEAR

PAPER II – GENERAL HUMAN PHYSIOLOGY AND BIOCHEMISTRY

Q.P. Code*: *544202

Time: Three Hours **Maximum: 70 Marks**

Answer All Questions in the same order
Draw Suitable diagrams wherever necessary
Answer section A and B in Separate Answer Books

SECTION – A
(GENERAL HUMAN PHYSIOLOGY)

I. Elaborate on: **(1 x 10 = 10)**

1. Define Blood Pressure. What is the normal value of Systolic and Diastolic Blood Pressure? What are the factors that affect Blood Pressure? Write in detail about Short term Regulation of Blood Pressure.

II. Write Notes on: **(3 x 5 = 15)**

1. Write briefly about the functions of Liver.
2. Structure and Function of Juxta-Glomerular Apparatus.
3. Write about the Functions of Growth Hormone.

III. Short answers: **(5 x 2 = 10)**

1. Define Active Transport. Give an example.
2. Function of Oestrogen.
3. Types of White Blood Cells.
4. List the functions of Cerebrospinal fluid.
5. Define Tidal Volume. What is the normal value?

SECTION – B
(BIOCHEMISTRY)

I. Elaborate on: **(1 x 10 = 10)**

1. What are ketone bodies? How are the ketone bodies synthesized and utilized in the body?

II. Write Notes on: **(3 x 5 = 15)**

1. Glycated hemoglobin.
2. One carbon metabolism.
3. Differentiate between competitive and non-competitive inhibition.

III. Short answers: **(5 x 2 = 10)**

1. Recombinant DNA Technology and any two applications.
2. Rickets.
3. Define Glycemic index.
4. What are Glycosaminoglycans?
5. Malate Aspartate shuttle.

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

[BDS 0226] **FEBRUARY 2026** **Sub. Code: 4202**

B.D.S. DEGREE EXAMINATION

{New Modified Revised Regulation (August 2016 Examination Session onwards)
And New Modified Regulation (Candidates admitted from 2008-2009 onwards)}

FIRST YEAR

PAPER II – GENERAL HUMAN PHYSIOLOGY AND BIOCHEMISTRY

Q.P. Code*: *544202

Time: Three Hours **Maximum: 70 Marks**

Answer All Questions in the same order
Draw Suitable diagrams wherever necessary
Answer section A and B in Separate Answer Books

SECTION – A
(GENERAL HUMAN PHYSIOLOGY)

I. Elaborate on: **(1 x 10 = 10)**

1. Name the hormones involved in regulation of Blood Sugar level. Write in detail about the functions of Insulin. Add a note on the signs and symptoms of Diabetes Mellitus.

II. Write Notes on: **(3 x 5 = 15)**

1. Draw a normal Electrocardiogram and write briefly about the different waves of a normal Electrocardiogram.
2. Micturition Reflex.
3. Muscles of Respiration.

III. Short answers: **(5 x 2 = 10)**

1. Define Homeostasis.
2. Functions of Testosterone.
3. List the hormones secreted by Anterior Pituitary gland.
4. List the functions of Platelets.
5. What are the different Refractive Errors of the Eye?

SECTION – B
(BIOCHEMISTRY)

I. Elaborate on: **(1 x 10 = 10)**

1. Describe the phases of activation, initiation, elongation and termination of protein biosynthesis.

II. Write Notes on: **(3 x 5 = 15)**

1. Sorbitol pathway.
2. Wald's visual cycle.
3. Discuss the metabolism of LDL (Low Density Lipoprotein).

III. Short answers: **(5 x 2 = 10)**

1. Limiting Aminoacids.
2. Van den Berg test for bilirubin.
3. High energy compounds.
4. What are Metalloenzymes? Give two examples.
5. What is oxidative deamination?

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