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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FIRST YEAR B.D.S. DEGREE EXAM

PAPER II – GENERAL HUMAN PHYSIOLOGY AND BIOCHEMISTRY

Q.P Code: *544202*

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

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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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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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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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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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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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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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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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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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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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