A (Printed Pages 4)

(20222) Roll No. .....

B.D.S. - I Prof.

5136 (N)

B.D.S. Supply. & Main Examination, Feb.-2022

Human Physiology & Biochemistry

(BDS-02(N))

Time : Three Hours] *[Maximum Marks : 35+35=70*

Note : (i) Attempt **all** questions. From Part A & B

(ii) Illustrate your answers with suitable diagram wherever necessary. Use separate copy for **Part A** & **Part B.**

Part - A

(Physiology)

1. Define Neuromuscular Junction. Discuss the mechanism of Neuromuscular Transmission. Add a note on Myasthenia Gravis. 1+4+2=7

P.T.O.

2. Define Erythropoiesis. Discuss the stages and factors affecting Erythropoiesis.

1+6=7

3. Describe in brief about- 2.5×2=5

(a) Role of Surfactant

(b) Hormones of thyroid gland

4. Differentiate between following:

2.5×4=10

(a) Action Potential and Graded Potential

(b) Rods and Cones

(c) Simple and fascilitated diffusion

(d) Hypoxic Hypoxia & Anaemic hypoxia

5. Write short notes on any **three** -2×3=6

(a) Functions of Platelets

(b) Gastric Emptying

(c) Functions of Liver

(d) Glomerular filteration Rate

Part - B

Bio-Chemistry

1. Describe the metabolic pathway of glycolysis and its regulation. 10

2. Describe in brief dietary requirement, sources, functions and dificiency symptoms of vitamin B_{12}. 8

3. Write in brief about: 3×3=9

   (a) Basal Metabolic rate

   (b) Gout

   (c) Coenzymes

4. Write short notes on: 2×4=8

   (a) Iron deficiency anemia

   (b) Phenyl ketonuria

(c) t-RNA

(d) Atherosclerosis.

D (Printed Pages 3)

(20421) Roll No. .

B.D.S.-I Prof.

5136(N)

B.D.S. Supply. & Main Examination, April - 2021

Human Physiology Biochemistry

(BDS-02(N))

Time : Three Hours] *[Maximum Marks : 35+35=70*

Note : (i) Attempt **all** questions.

(ii) Illustrate your answers with suitable diagram wherever necessary. Use separate copy for **Part A** & **Part B**.

Part - A

1. Define Erythropoiesis. Discuss the stages & regulation of Erythropoiesis. 1+3+4=8

2. Describe the oxygen-haemoglobin dissociation curve & factors affecting it.

4+4=8

P.T.O.

3. Write short notes on any **three**: 3×3=9

(a) Peristalsis

(b) Functions of growth hormone

(c) Pain pathway

(d) Active transport

4. Differentiate between any **two**: 2×3=6

(a) Cortical & Juxta-medullary nephron

(b) First and second heart sound

(c) Hypo and Hyperthyroidism

5. Define only: 1×4=4

(a) Phago cytosis

(b) Cardiac cycle

(c) Ovulation

(d) Blood pressure

Part - B

Bio-Chemistry

1. Describe the sources, requirement, bio-chemical functions and deficiency manifestations of vitamin A.

1+1+4+4=10

2. (a) Write in brief about the followings: 3+3+3=9

(i) Competitive inhibition

(ii) Phenyleketonuria

(iii) Post-transcription modifications.

(b) Enumerate the major steps of synthesis of cholesterol. Describe different biological roles of cholesterol. 4+4=8

3. Write short notes: 2×4=8

(a) Labelled structure of IgG.

(b) Polysaccharides

(c) Balanced diet

(d) Irreversible steps of glycolysis.

A.

(Printed Pages 4)

(21120)

Roll No. ..

B.D.S.-I Prof.

5136 (N)

B.D.S. Supply. & Main Examination,

Nov. - 2020

Human Physiology Biochemistry

[BDS - 02 (N)]

Time : Three Hours] *[Maximum Marks : 35+35=70*

Note: (i) Attempt **all** questions.

(ii) Illustrate your answers with suitable diagram wherever necessary. Use separate copy for **Part-A** & **Part-B**.

Part - A

1. Define blood pressure & its various components. Discuss the role of baroreceptors in its regulation. 2+6=8

P.T.O.

2. List the hormones regulating serum calcium level & write briefly about their functions. 2+6=8

3. Write short notes on any **three**- 3×3=9

   (a) Pulmonary surfactant

   (b) Juxta-glomerular apparatus

   (c) Spermatogenesis

   (d) Iron deficiency anaemia

4. Differentiate between **any two :** 2×3=6

   (a) Simple and facilitated diffusion

   (b) Myopia and hypermetropia

   (c) Action potential in skeletal & cardiac muscle.

5. Define only: 1×4=4

   (a) Cardiac output

   (b) Vital capacity

   (c) Glomerular filtration rate

   (d) Synapse

Part - B

Biochemistry

1. Give the significance of hexose monophosphate pathway. Illustrate its importance in erythrocytes. Explain the harmful effect of glucose 6 phosphate dehydrogenase enzyme deficiency.

2+2+2=6

2. Write the functions of calcium in our body. Give the normal range of serum calcium and explain how calcium level is regulated. 2+1+2=5

3. Write short notes on the following :

3×8=24

(i) Selenium

(ii) Antigen presenting cells

(iii) Folate trap

(iv) Ketone bodies

(v) Apoptosis

(vi) Post translational modifications

(vii) Pre hepatic jaundice

(viii) Competitive enzyme inhibition

A

(201119)

B.D.S.-I Prof.

Printed Pages : 2

Roll No. .....

5136(N)

B.D.S. Supply. & Main Examination, November-2019

HUMAN PHYSIOLOGY AND BIOCHEMISTRY

[BDS-02(N)]

Time : Three Hours] *[Maximum Marks : 35+35=70*

Part–I

Note : (i) Attempt **all** questions.

(ii) Illustrate your answers with suitable diagram wherever necessary. Use separate copy for **Part–I** and **Part–II**.

1. Define arterial blood pressure. Give its normal range and describe the regulation of it. 8

2. Draw a well labelled diagram of Juxtaglomerular apparatus (JHA) and describe its functions. 3+5=8

3. Differentiate between the following : 3×3=9
   (a) Rods and cones
   (b) Adult and fetal haemoglobin
   (c) Pituitary dwarf and thyroid dwarf

4. Write short note on any *two* : 2.5×2=5

   (a) Salvia (b) Deafness

   (c) Spermatogenesis

5. Define and give its normal values : 2.5×2=5

   (a) GFR (b) Cardiac output

Part–II
Bio-Chemistry

6. Describe the Biochemical functions, Dietary requirement, Sources, Absorption, Transport and storage of Iron in the body. Write briefly about excess/deficiency of Iron. 8+2=10

7. (a) What is Jaundice ? Classify it on the basis of different biochemical parameters. 2+7=9

   (b) Write briefly on the following : 4+4=8

   (i) Definition, biological importance and classification of Lipids

   (ii) Forms and functions of RNA

8. Write short notes on each of the following : 4+4=8

   (a) Inborn errors of amino acid metabolism

   (b) Basal Metabolic Rate

G

Printed Pages : 3

(21218)

Roll No. .....

B.D.S.-I Prof.

5136(N)

B.D.S. Supply. & Main Examination, November-2018

HUMAN PHYSIOLOGY & BIOCHEMISTRY

[BDS-02(N)]

Time : Three Hours] *[Maximum Marks : 35+35=70*

Note : *(i) Attempt all questions.*

(ii) Illustrate your answers with suitable diagram wherever necessary. Use separate copy for **Part-A** *and* **Part-B.**

Part-A

(Human Physiology)

1. Draw well labeled diagram of neuro muscular Junction (NMJ). Give sequence of events across it during transmission of nerve impulse. 8

2. Name the hormones secreted by Pituitary Gland. Discuss the physiological action of growth hormone. 8

3. Differentiate between the following : 3×3=9

(a) Type I and Type II skeletal muscle fiber

(b) Fetal hemoglobin and adult hemoglobin

(c) Rods and cones.

4. Write short note on any *four* – 2.5×4=10

(a) Juxtaglomerular apparatus

(b) Lung volumes and capacities

(c) Plasma proteins

(d) Functions of saliva

(e) Oral-contraceptive

Part-B

(Bio-Chemistry)

1. Write all reactions of hexose monophosphate shunt pathway. Add a note on the metabolic significance of this pathway. 4+6=10

2. (a) How ketone bodies are synthesized and disposed off from human body ? Why they are increased in starvation and diabetes both ? 5+5=10

(b) What are Plasma Buffers ? And the note on the biochemistry of respiratory acidosis and respiratory alkalosis. 2+4=6

3. Write short note on any *three* of the following : 3×3=9

(a) Gluconeogenesis

(b) Figure of replicating DNA Showing all Enzymes

(c) Secondary Structure of Protein

(d) Fluid Mosaic Model

N (Printed Pages 3)

(201117) Roll No. .....

B.D.S. I Prof.

5136(N)

B.D.S. Supply. & Main Examination, Nov-2017

Human Physiology & Biochemistry

BDS-02(N)

Time : Three Hours] *[Maximum Marks : 35+35=70*

Note : (1) Attempt all questions.

(2) Illustrate your answers with suitable diagram wherever necessary. Use separate copy for **Part-A** and **Part-B**

Part-A

1. Define Anaemia. Give the classification of Anaemia and describe megaloblastic anaemia in detail. 7

P.T.O.

2. Describe the regulation of respiration briefly. 7

3. Differentiate between the following : 4×2=8

(a) Active and Passive transport

(b) Liver bile and gall bladder bile

(c) Rods and Cones

(d) Isometric contraction and Isotonic contraction

4. Write briefly about the following : 3½×2=7

(a) Hypoxic Hypoxia

(b) Cerebellum

5. Write short notes on any **three** of the following : 2×3=6

(a) Corpus Luteum

(b) Pituitary dwarf

(c) Myasthenia gravis

(d) Cardiac output

Part-B

(Bio-chemistry)

1. What are iso-enzymes? Give examples. What are their chemical significance? 6

2. Describe the process of DNA replication. Name two inhibitors of replication. 5

3. Write short notes on the following : 3×8=24

(i) Glycogen storage disease

(ii) Glycated hemoglobin

(iii) Poly unsaturated fatty acids

(iv) Specific dynamic action

(v) Atherosclerosis

(vi) Lesch - Nyhan syndrome

(vii) Genetic code

(viii) Tumour markers

V (Printed Pages 4)

(20216) Roll No.....

B.D.S. I Prof.

5136(N)

B.D.S. Supply & Main Examination, Feb. 2016

Human Physiology & Biochemistry

(BDS-02)

Time : Three Hours] *[Maximum Marks : 35+35*

Note : (1) Attempt **all** questions.

(2) Illustrate your answers with suitable diagram wherever necessary. Use separate copy for Part-A and Part-B.

PART-A

(PHYSIOLOGY)

1. Define blood pressure, its type and normal values. Describe the short term regulatory mechanisms for control of blood pressure. 1+2+4=7

P.T.O.

N (Printed Pages 4)

(21116) Roll No. .....

B.D.S. I Prof.

5136(N)

B.D.S. Supply & Main Examination, Nov. 2016

Human Physiology & Biochemistry

(BDS-02)

Time : Three Hours] *[Maximum Marks : 35+35*

Note : (1) Attempt **all** questions.

(2) Illustrate your answers with suitable diagram wherever necessary. Use separate copy for Part-A and Part-B.

Part-A

(Physiology)

1. Define Cardiac output. Describe its methods of measurement. 07

P.T.O.

2. Enumerate the hormones which regulate the serum calcium level. Describe the role of parathyroid hormone in detail. 07

3. Differentiate between : 2.5×4=10

   (a) First heart sound and second heart sound

   (b) Upper motor neuron lesion and lower motor neuron lesion

   (c) Myopia and hypermetropia

   (d) Red muscle fiber and white muscle fiber.

4. Write in brief : 2.5×2=5

   (a) Spermatogenesis

   (b) Clotting factors of Blood

5. Write short notes on any **three** : 2×3=6

   (a) Middle ear

   (b) Chemical regulation of Respiration

(c) Counter current mechanism of urine formation

(d) Visceral Pain

Part-B

(Biochemistry)

1. Describe the sources, biochemical functions, normal requirements and deficiency manifestations of Vit. D. 5

2. What are Ketone bodies? Explain the reactions leading to the formation of them. How are they utilised in the body. 4

3. Discuss the biochemical alterations seen in blood & Urine in different types of Jaundice. 4

4. Describe the process of DNA replication. Name two inhibitors of replication. 4

5. Write short notes on : $3 \times 6 = 18$

(a) Glucose Tolerance Test (GTT)

(b) Fatty liver

(c) Mutarotation

(d) Enzyme Profile in Myocardial Infraction

(e) Oncogenes

(f) Detoxification

(21015) Roll No. .....

B.D.S. I Prof.

5136(N)

B. D. S. Supply. & Main Examination, Oct. 2015

Human Physiology & Biochemistry

[BDS-02(N)]

Time : Three Hours] *[Maximum Marks : 35+35=70*

Note : (1) Attempt *all* questions.

(2) Illustrate your answers with suitable diagram wherever necessary. Use separate copy for Part-A and Part-B.

Part-A

(Physiology)

1. Define glomerular filtration rate (GFR). Give its normal value and discuss the factors affecting it. 7

2. Enumerate the hormones secreted by Ant Pituitary Gland and discuss physiological actions of growth hormone in detail. 7

3. Differentiate between the following : 2.5×4=10

(a) Rods and Cones

(b) Active and Passive transport

(c) Intrinsic and Extrinsic mechanism of blood coagulation.

(d) Tetany and Tetanus.

4. Write briefly about the following : 2.5×2=5

(a) Functions of Placenta

(b) Menstrual cycle.

5. Write short notes on any three of the following : 2×3=6

(a) Hypoxia

(b) Neuromuscular junction

(c) Basal Ganglia

(d) Acquired immunity.

Part-B

(Biochemistry)

1. What are the different types of enzyme inhibition ? Explain with suitable examples. 5

2. Give the normal blood glucose levels in fasting conditions and after a carbohydrate meal. What are the mechanisms by which normal range is maintained? 4

3. Describe sources, biochemical functions, requirements and deficiency manifestations of Vitamin-A. 4

4. Describe the reactions of Urea cycle. Discuss the interrelation of Urea cycle and Citric acid cycle. 4

5. Write short notes on the following : 3×6=18
   (a) Fluorosis
   (b) Basal metabolic rate
   (c) DNA polymerase
   (d) Gout
   (e) Uncouplers of oxidative phosphorylation
   (f) Lipoproteins.

(20913) Roll No. 2.8.8.2.0.4.5

BDS-I Prof.

5136(N)

B. D. S. (Main & Supply) Examination, Sept. 2013

Human Physiology & Biochemistry

(BDS-02)

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

Note : Attempt all questions. Illustrate your answers with suitable diagrams. Use separate copy for Part A and Part B.

Part-A

(Human Physiology) [Marks : 35

1. Define erythropoiesis. Describe in brief the stages of erythropoiesis. Enumerate the factors affecting it. 5

2. Define Cardiac output. Describe its regulation. 6

3. Write briefly about the following: 2×3=6

   (a) Role of parathyroid hormone in calcium metabolism.

   (b) Chemical regulation of respiration.

4. Write short notes on any three of the following : 2×3
   (a) Functions of platelets
   (b) Peristalsis
   (c) Chloride shift or Hamburger phenomenon.

5. Differentiate between the following :
   (a) Simple and facilitated diffusion
   (b) Thick and thin skeletal muscle filaments
   (c) Excitatory pos synaptic potential (EPSP) and inhibitory post synaptic potential (IPSP)
   (d) Photopic and scotopic vision

Part-B
(Biochemistry)

[Marks :35

1. Explain the basis of increase of urea and creatinins in blood in renal insufficiency. 4

2. Explain the basis of internal bleeding arising due to deficiency of Vitamin-K. 4

3. Classify Jaundice and its evaluation. Describe in brief the liver function test. 4

4. What is end product inhibition ?. Explain the competitive, uncompetitive and non-competitive inhibition. 5

Write short notes on the following : 3×6

(a) Vitamin-D

(b) Hyperthyroidism

(c) Collagen

(d) Non-essential Amino Acid

(e) Diabetes mellitus

(f) Genetic code.

(201112)

Roll No. 6092631

B.D.S. I Prof.

5136(N)

B. D. S. Examination, Nov. 2012

Human Physiology & Biochemistry

(BDS-02)

Time : Three Hours] *[Maximum Marks : 35+35*

Note : (i) Attempt *all* questions.

(ii) Illustrate your answers with suitable diagram wherever necessary. Use separate copy for Part-A and Part-B.

Part-A : Human Physiology [Marks : 35

1. Explain with the help of flow chart the extrinsic and intrinsic pathway of coagulation. 6

2. Write briefly about the following: 5×2=10

   (a) Short-term regulation of blood pressure

   (b) Digestion and absorption of fats.

3. Write short notes on the following : 2½×4=10

(a) Juxtaglomerular apparatus

(b) Excitation-contraction coupling

(c) Permanent methods of contraception

(d) Surfactant.

4. Draw labelled diagram of the following : 3×3=9

(a) Oxyhaemoglobin dissociation curve

(b) Photoreceptors or Retina

(c) Mature sperm.

Part-B : Biochemistry [Marks : 35

1. What is the role of cyclic AMP in glycogenolysis ? 5

2. Explain the primary, secondary and tertiary structure of protein. What are the forces which stabilized them ? 4

3. Describe the sources, daily requirement, absorption and deficiency manifestation of calcium. 4

4. What is oxidative deamination ? 4

5. Write short notes on the following : 3×6=18

(a) What is Fluorosis ?

(b) Why we do require phosphorous and magnesium ?

(c) Give the structure of haemoglobin and what is the prosthetic group of haemoglobin ?

(d) What are the functions of Vitamin-K ?

(e) What is the cause of diabetes mellitus ?

(f) What are the functions of Vitamin-C ?

P (Printed Pages 3)

(21110) Roll No. .....

B.D.S. I Prof.

5136 (N)

B.D.S. Examination Nov. 2010

Human Physiology & Biochemistry

Paper - II

(BDS – 02)

(New)

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

Note : 1. Attempt all questions.

2. Illustrate your answers with suitable diagram wherever necessary.

Part 'A' (Physiology)

1. Draw a labelled diagram of Nephron. Describe the structure and function of Joxta Glomerular Appratus. 6

P.T.O.

2. Define Cardic output and its normal Values in males and females. What are the factors which affect Cardiac output? 5

3. Differentiate between : 2.5×4=10

   (a) Humoral and Cellular Immunity

   (b) Myopia and Hypermetropia

   (c) Hepatic and Gall Bladder Bile

   (d) Pitutary and Thyroid Dwarf

4. Write briefly about : 4×2=8

   (a) Oxy Haemoglobin dissociation curve

   (b) Menstrual cycle

5. Write short notes on any three : 2×3=6

   (a) Night blindness

   (b) Functions of skin

   (c) Refferred pain

   (d) Aldostenone

Part - 'B' (Biochemistry)

1. What is the major catabolic pathway of glucose under anaerobic conditions? Mention the steps in the pathway and indicate the key enzymes. 5

2. What is the composition of Saliva? 4

3. Explain the steps of β-oxidation of Palmitic acid, giving energetics. 4

4. What is the differences between. Rickets and Osteomalacia? 4

5. Write short notes on : 3×6=18

   (a) How iron is absorbed in the body?

   (b) Explain the oxygen dissociation curve

   (c) Flurosis

   (d) Factor's influencing calcium absorption.

   (e) Describe sources, functions, requirement and deficiency manifestation of Vitamin-C.

   (f) Describe the hormones of anterior pitutary glands.

2. Describe Erythropoiesis. What is the normal life span and functions of Red blood cells ? 4

3. Enumerate posterior pituitary hormones and describe their functions.

4. Differentiate between : 1.5×4=6

(a) Bohr's effect and Holdane's effect

(b) Cortical and juxtamedullayr nephrons

(c) First and second heart sounds

(d) Gastrin and secretin.

5. Write short notes on : 7

(a) Composition and functions of CSF

(b) Sertoli cell

(c) Myopia.

Part-B

(Biochemistry) [Marks :25

1. Define carbohydrates and classify. Give one example of each. 3

2. Describe the secondary and tertiary structures of proteins. 4

3. Define β-oxidation and describe the oxidation of fatty acids. 5

4. Describe digestion of proteins in gastrointestinal tract. 4

5. Write short notes on : 6

(a) Cholesterol

(b) Allosteric enzymes

(c) Essential fatty acids.

6. Discuss the functions of calcium in the body. 3

(2129) Roll No. .....

BDS I Prof.

O-5136

B. D. S. Examination, 2009

Paper–II

General Human Physiology & Biochemistry

(BDS-02)

(Old Course)

Time : Three Hours] *[Maximum Marks : 50*

Note : Attempt *all* questions. Illustrate your answers with suitable diagrams. Use separate copy for Part A & part B.

Part-A

(*General Human Physiology*) [Marks :25

1. Draw a labelled diagram of myoneural junction. Write briefly about contractile proteins. 4

V
(2058) Roll No.....
B.D.S. I Professional

5136

B.D.S. Examination, 2008

Paper–II

General Human Physiology & Biochemistry

(BDS–02)

Time : Three Hours} *{ Maximum Marks : 50 (25+25)*

Note: Attempt all questions. Illustrate your answers with suitable diagrams. Use separate copy for part A & part B.

PART–A
(General Human Physiology)

1. Write briefly about the functions of Kidney and Juxtaglome-rular apparatus. 4

2. What are the Harmonal changes during different phases of menstrual cycle. 4

3. Describe the Mechanical events occuring in cardiac cycle. 4

4. Describe briefly about the regulation of calcium level in blood. 4

(2)

5. Define the Immunity. Discuss the role of T. lymphocytes in immune response. 4

6. Write short notes on :
   (a) Rh–incompability 2½
   (b) Hypoxia 2½

PART–A
(Biochemistry)

1. (a) What are amino acids ? How are these classified ? Give one example of each. 5
   (b) Describe the peptide bond. What treatment might lead to the denaturation of proteins ? 2

2. (a) Write the International classification of enzymes with one example of each. 2
   (b) Differentiate : 4
      (i) Competitive and non competitive inhibition.
      (ii) Coenzymes and isoenzymes.

3. Enumerate the factors that influence the absorption of calcium. Give in details how blood calcium levels are regulated. 4

4. Describe the chemistry and functions of glycogen. 4

5. Describe the biological importance, chemistry and properties of compound lipids. 5

—x—

I.T.S CENTRE FOR DENTAL STUDIES & RESEARCH

Delhi-Meerut Road, Murad Nagar, Ghaziabad

BDS Ist Year (Supplementary Students)

Physiology & Biochemistry

Time – 3hrs. Date – 28.03.2007

MM : 50

* **All questions are compulsory. Draw diagrams wherever necessary. Write Part A & Part B on separate sheet.**

Physiology

Q 1. Write short notes on any **four** of the following :- 3 x 4 = 12

a. Functions of Cerebellum.
b. Regulation of Body Temperature.
c. Cerebrospinal Fluid (CSF)
d. Chemoreceptors.
e. Circadian rhythm

Q 2. Draw labeled diagrams of the following: 4 x 2 = 8

a. ECG
b. Pyramidal Tracts.

Q 3. Discuss the different stages of circulatory shock and the compensatory mechanism which get activated. 5

Biochemistry

Q 1. Explain Glycogen Synthesis, Breakdown and their regulation. 5

Q 2. How is cholesterol transported in our body. Describe the role of Lipoproteins in Atherosclerosis. 5

Q 3. Write short notes on any **five** of the following :-

a. Collagen & role of Vit-C in Collagen formation.
b. Phenylketonurea & Alkaptanurea.
c. Glycosylated Haemoglobin (HBA1C)
d. Transamination Reactions.
e. Iron transport in Body.
f. Isozymes.