ST.GREGORIOS DENTAL COLLEGE, CHELAD

Reg. No.: .....

First BDS Degree Regular/Supplementary Model Examinations, September 2024

General Human Physiology and Biochemistry

(2016 Scheme)

Time: 3 hrs.Max marks: 70

- **Answer all questions to the point neatly and legibly • Do not leave any blank pages between answers • Indicate the question number correctly for the answer in the margin space**
- **Answer all parts of a single question together • Leave sufficient space between answers**
- **Draw Diagrams wherever necessary**
- **Write section A and section B in separate answer books (32 pages). Do not mix up questions from section A and section B**

Q P Code: 112002 **Section A: Physiology** **Max Marks: 35**

Essay: **(2+5+3=10)**

1. List any two sensory pathways. With the help of a labelled diagram explain pathway for pain sensation. Add a note on referred pain. CO2, K1

Short Notes: **(2x5=10)**

2. Enumerate adrenal hormones. Describe the functions of glucocorticoids. Mention disorders. CO2, K1
3. Exocrine functions of pancreas. CO3, K2

Answer Briefly: **(5x3=15)**

4 Typical ECG. CO1, K1
5. Refractive errors of eye and its corrections. CO2, K2
6. Sketch out taste pathway. Write down the primary taste modalities. CO2, K1
7. Oral contraceptives. CO2, K1
8. Vital Capacity. CO2,K1

Q P Code: 113002 **Section B: Biochemistry** **Max Marks: 35**

Essay: **(1+3+6=10)**

1. What is the normal serum bilirubin level. Describe the formation of bilirubin. Explain the causes and biochemical alterations in blood and urine in differenttypes of jaundice. CO6, K4

Short Notes:

2. Mention any six functions and deficiency manifestations of ascorbic acid. CO2,K2 **(3+2=5)**
3. Describe the formation and utilization of ketone bodies. CO3, K4 **(2+3=5)**

Answer Briefly: **(5x3=15)**

4. Significance of pentose phosphate pathway. CO1, K1
5. Gout. CO2, K2
6. Biological functions, deficiency and toxicity of fluoride. CO2, K2
7. Transamination and its significance. CO3, K4
8. Competitive inhibition of enzymes with two examples. CO5, K3

ST. GREGORIOS DENTAL COLLEGE, CHELAD

Reg. No.: .....

First BDS Degree Regular/Supplementary Model Examinations, Answer Key, September, 2024

General Human Physiology and Biochemistry

(2016 Scheme)

Time: 3 hrs. **Max marks: 70**

- **Answer all questions to the point neatly and legibly • Do not leave any blank pages between answers • Indicate the question number correctly for the answer in the margin space**
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- **Write section A and section B in separate answer books (32 pages). Do not mix up questions from section A and section B**

Q P Code: 112002 **Section A: Physiology** **Max Marks: 35**

Essay: (2+5+3=10)

1. Any two sensory pathway (taste, smell, pain, touch). Trace lateral spinothalamic tract. Explain origin, course and termination. Define referred pain with examples.

Short Notes: **(2x5=10)**

2. Adrenal hormones, functions of glucocorticoids. Mention disorders.
3. Exocrine secretions of pancreas, digestive and neutralizing functions.

Answer Briefly: **(5x3=15)**

4 Normal ECG – waves and intervals.
5. Mention different refractive errors of eye and its corrections.
6. Sketch taste pathway, mention primary taste modalities.
7. Mention oral contraceptives – mechanism of action.
8. Define Vital Capacity, normal value, Variations.

Q P Code: 113002 **Section B: Biochemistry** **Max Marks: 35**

Essay: **(1+3+6=10)**

1. Serum bilirubin concentration(<1mg/dL) **(1)**, Synthesis of bilirubin**(3)**, Causes and differential diagnosis of jaundice **(6).**

Short Notes:

2 Six functions of vitamin C **(3)**, Scurvy **(2)**.
3. Synthesis of ketone bodies from acetyl CoA **(2)**, Ketolysis and its significance **(3)**.

Answer Briefly:

4. Functions of ribose sugar and NADPH **(3)**.
5. Primary and secondary gout**(3)**.
6. Fluoride- function **(1)**, deficiency **(1)** and toxicity **(1)**.
7. Definition **(1)**, example **(1)** and significance **(1)** of transamination reaction.
8. Definition **(1)** and two clinical examples of competitive inhibition**(2)**.

ST. GREGORIOS DENTAL COLLEGE, CHELAD

Reg. No.: .....

First Year BDS Degree Regular III Internal Examinations, June 2024

General Human Physiology and Biochemistry

(2016 Scheme)

Time: 3 hrs **Max marks: 70**

- **Answer all questions to the point neatly and legibly • Do not leave any blank pages between answers • Indicate the question number correctly for the answer in the margin space**
- **Answer all parts of a single question together • Leave sufficient space between answers**
- **Draw Diagrams wherever necessary**
- **Write section A and section B in separate answer books (32 pages). Do not mix up questions from section A and section B**

Q P Code: 112002 **Section A: Physiology** **Max Marks: 35**

Essay: **(1+3+4+2=10)**

1. What is Thyroxin? Explain synthesis of thyroxin. How thyroxin is involved in metabolism. Mention two disorders.CO1&CO3, K3

Short Notes: **(2x5=10)**

2. Explain the structure of NMJ and Neuromuscular Transmission. CO2, K2
3. Describe the visual pathway with the help of a diagram. CO2, K2

Answer Briefly: **(5x3=15)**

4. Urinary bladder and Micturition reflex. CO1, K2
5. Thermoregulatory responses while body is exposed to cold environment.CO2, K3
6. Mouth to mouth method of artificial respiration. CO3, K4
7. Functions of Oxytocin. CO1, K2
8. Errors of refraction and its correction. CO3, K3

Q P Code: 113002 **Section B: Biochemistry** **Max Marks: 35**

Essay: **(1+3+4+2=10)**

1. Describe the steps involved in activation of fatty acid, role of carnitinetransport system and beta oxidation of palmitic acid. Add anote on its energetics.CO3, K3

Short Notes:

2. Explain hormonal regulation of blood glucose level. CO1&CO3, K3 **(5)**
3. Enlist the steps involved in detoxification of ammonia and any two disorders associated with it. CO3, K3 **(3+2=5)**

Answer Briefly: **(5x3=15)**

4. Functions of lipoproteins. CO1, K2
5. Diabetes mellitus. CO3, K3
6. Key gluconeogenic enzymes. CO3, K3
7. Ketosis. CO3, K3
8. Transamination and its significance. CO3, K3

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ST.GREGORIOS DENTAL COLLEGE, CHELAD

Reg. No.: .....

First Year BDS Degree Regular III Internal Examinations, Answer key, June 2024

General Human Physiology and Biochemistry

(2016 Scheme)

Time: 3 hrs **Max marks: 70**

- **Answer all questions to the point neatly and legibly • Do not leave any blank pages between answers • Indicate the question number correctly for the answer in the margin space**
- **Answer all parts of a single question together • Leave sufficient space between answers**
- **Draw Diagrams wherever necessary**
- **Write section A and section B in separate answer books (32 pages). Do not mix up questions from section A and section B**

Q P Code: 112002 **Section A: Physiology** **Max Marks: 35**

Essay: **(1+3+4+2=10)**

1. Definition of Thyroxin, steps of synthesis of thyroxin, Action of thyroxin in carbohydrate, protein and fat metabolism. Mention any two disorders.

Short Notes: **(2x5=10)**

2. NMJ- structure, explanations, transmission, flow chart.
3. Visual pathway – diagram and explanations.

Answer Briefly: **(5x3=15)**

6. Urinary bladder – structure, innervation. Micturition reflex – flow chart.
5. Thermoregulatory mechanisms during cold.
6. Explain the procedure.
7. Write major functions of oxytocin.
8. Any three refractory errors and their corrections with diagrams.

Q P Code: 113002 **Section B: Biochemistry** **Max Marks: 35**

Essay:

1. Activation of fatty acid (1), Carnitine transport system (3), beta oxidation (4) and energetics (2) of palmitic acid.

Short Notes:

2. Role of hypoglycemic and hyperglycemic hormones. (5)
3. Urea cycle (3) and two disorders. (2).

Answer Briefly:

4. Lipoprotein functions. (3)
5. Types and symptoms of diabetes mellitus. (3)
6. Regulatory enzymes in gluconeogenesis. (3)
7. Ketonemia and Ketonuria. (3)
8. Transamination reaction (1.5) and its significance. (1.5)

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ST.GREGORIOS DENTAL COLLEGE, CHELAD

Reg. No.: .....

First Year BDS Degree Regular II Internal Examinations, March 2024
General Human Physiology and Biochemistry
(2016 Scheme)

Time: 3 hrs **Max marks: 70**

- **Answer all questions to the point neatly and legibly • Do not leave any blank pages between answers • Indicate the question number correctly for the answer in the margin space**
- **Answer all parts of a single question together • Leave sufficient space between answers**
- **Draw Diagrams wherever necessary**
- **Write section A and section B in separate answer books (32 pages). Do not mix up questions from section A and section B**

Q P Code: 112002 **Section A: Physiology** **Max Marks: 35**

Essay:

1. What is saliva? Describe the mechanism of salivary secretion. How the composition of saliva determines its function. How saliva secretion is regulated. CO1&CO4, K4 **(1+3+4+2=10)**

Short Notes:

2. List the forms in which CO_2 is transported. Explain Haldane effect.CO1,K2 **(4+1=5)**
3. Define GFR and explain factors affecting GFR. CO1, K2 **(1+4=5)**

Answer Briefly: **(5x3=15)**

4. Pulmonary surfactant and its functions. CO2, K3
5. Juxtaglomerular apparatus. CO1, K2
6. Vital capacity and its variations. CO3, K3
7. Sino-aortic reflex mechanism. CO2, K2
8. Digestive enzymes of pancreas. CO1, K2

Q P Code: 113002 **Section B: Biochemistry** **Max Marks: 35**

Essay:

1. Explain competitive inhibition of enzymes and its two clinical significances. Discuss the enzyme markers in cardiac and liver diseases. CO3 & CO4, K3 **(6+4=10)**

Short Notes:

2. Describe the absorption and transport of iron. CO2, K2
3. Deficiency manifestations of Vitamin A. CO3, K3 **(3+2+5)**
(5)

Answer Briefly: **(5x3=15)**

4 Functions of Albumin. CO1, K3
5. Role of substrate concentration on enzyme activity. CO1, K2
6. Function, deficiency and toxicity of fluorine. CO3, K3
7. Mechanism of oxidative phosphorylation. CO3, K2
8. Principles of colorimetry. CO6, K4

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ST.GREGORIOS DENTAL COLLEGE, CHELAD

Reg. No.: .....

First Year BDS Degree Regular II Internal Examinations, Answer key, March 2024

General Human Physiology and Biochemistry

(2016 Scheme)

Time: 3 hrs **Max marks: 70**

- **Answer all questions to the point neatly and legibly • Do not leave any blank pages between answers • Indicate the question number correctly for the answer in the margin space**
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- **Write section A and section B in separate answer books (32 pages). Do not mix up questions from section A and section B**

Q P Code: 112002 **Section A: Physiology** **Max Marks: 35**

Essay: **(1+3+4+2=10)**

1. Definition of saliva, mechanism of primary and secondary secretion. Composition and major functions of saliva. Sympathetic and parasympathetic mechanism of regulation of saliva.

Short Notes:

2. Explain the four ways by which CO_2 is transported across the blood. Explain Haldane effect and its significance. **(4+1=5)**
3. Definition -GFR- normal value, factors affecting – capillary hydrostatic pressure, Colloidal osmotic pressure in glomerulus, Bauman's capsule hydrostatic pressure, Tubuloglomerular feedback mechanism. **(1+4=5)**

Answer Briefly: **(5x3=15)**

4. Definition, composition and main functions.
5. JGA- structure, explanation of Macula densa, JG cells and extra glomerular mesangial cells.
6. Definition, normal value, variations in physiological and pathological conditions.
7. Sino-aortic reflex mechanism for controlling BP and HR – Baroreceptor and chemoreceptor mechanism.
8. Major proteolytic, lipolytic and amylolytic enzymes of pancreas.

Q P Code: 113002 **Section B: Biochemistry** **Max Marks: 35**

Essay:

1. Mechanism of competitive inhibition (4), Two clinical significances (2), marker Enzymes in liver and cardiac diseases (4).

Short Notes:

2. Absorption of iron (3), Transport of iron (2)
3. Deficiency of Vit A on vision, skin, growth and reproduction. (5)

Answer Briefly:

4 Any three functions of albumin – osmotic balance, transport, buffering action, Nutritive function. (3)

5. Graphical representation (2), mention significance of Km value (1)
6. Functions (1), deficiency (1) and toxicity (1) of fluorine.
7. Explain chemiosmotic theory (3).
8. Beer-Lambert's law (3).

ST.GREGORIOS DENTAL COLLEGE, CHELAD

Reg. No.: .....

First Year BDS Degree Regular I Internal Examinations, December 2023
General Human Physiology and Biochemistry
(2016 Scheme)

Time: 3 hrs **Max marks: 70**

- Answer all questions to the point neatly and legibly • Do not leave any blank pages between answers • Indicate the question number correctly for the answer in the margin space
- Answer all parts of a single question together • Leave sufficient space between answers
- Draw Diagrams wherever necessary
- Write section A and section B in separate answer books (32 pages). Do not mix up questions from section A and section B

Q P Code: 112002 **Section A: Physiology** **Max Marks: 35**

Essay:

1. Define cardiac cycle with normal timings. Describe in detail about mechanical events and its correlation with arterial and ventricular pressure changes, volume Changes and heart sounds. CO4, K4 **(2+5+3=10)**

Short Notes:

2. Erythropoiesis and mention factors influencing it. CO1, K2 **(2x5=10)**
3. Explain the Intrinsic and Extrinsic pathways of coagulation. CO2, K2

Answer Briefly:

4. Mastication. CO1, K2 **(5x3=15)**
5. Pharyngeal stage of deglutition. CO2, K3
6. Pernicious anemia. CO1, K2
7. Typical electrocardiogram or Limb lead II record. CO1,K2
8. Cell mediated immunity. CO1, K3

Q P Code: 113002 **Section B: Biochemistry** **Max Marks: 35**

Essay:

1. Define denaturation of proteins. What are the factors that affect denaturation? Describe the features of denatured product. Give one example. CO2, K3 **(2+3+4+1=10)**

Short Notes:

2. Essential fatty acids and its functions. CO1, K2 **(2x5=10)**
3. Mention the composition of glycosaminoglycans and its functions with examples. CO1, K2

Answer Briefly:

4. Glutathione and its significance. CO3, K2 **(5x3=15)**
5. Lipoproteins and its functions. CO1, K2
6. What are epimers?Mention two examples. CO1, K2
7. Label secondary structure of proteins. CO1, K2
8. Name three phospholipids with its composition and functions. CO1, K2

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ST.GREGORIOS DENTAL COLLEGE, CHELAD

Reg. No.: .....

First Year BDS Degree Regular I Internal Examinations, Answer key, December 2023

General Human Physiology and Biochemistry

(2016 Scheme)

Time: 3 hrs **Max marks: 70**

- **Answer all questions to the point neatly and legibly • Do not leave any blank pages between answers • Indicate the question number correctly for the answer in the margin space**
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Q P Code: 112002 **Section A: Physiology** **Max Marks: 35**

Essay:

1. Definition, normal timings, phases, graphical representation of pressure and volume changes – correlate with heart sounds. **(2+5+3=10)**

Short Notes:

2. Definition, stages, factors affecting it. **(2x5=10)**
3. Flow chart of intrinsic and extrinsic pathways, clotting factors, explanations, clot retraction.

Answer Briefly:

4. Mastication – Brief explanation. **(5x3=15)**
5. Movements, diagram.
6. Cause, symptoms.
7. Diagram, explanations.
8. Role of T cells in developing immunity.

Q P Code: 113002 **Section B: Biochemistry** **Max Marks: 35**

Essay:

1. Describe the structural alteration. (2), agents causing denaturation (3), Changes in the structure and functions of products (4), Any one example of denaturation process (1). **(2+3+4+1=10)**

Short Notes:

2. Linoleic and Linolenic acid (2), explain any three functions (3). **(2x5=10)**
3. Aminosugar and uronic acid (2), example and functions (3).

Answer Briefly:

4. components of glutathione (1), functions (2). **(5x3=15)**
5. Lipids and protein parts present in lipoproteins (1.5), functions of four classes of lipoproteins (1.5).
6. Definition (1), two examples (2).
7. Draw and explain α helix (1.5) and β- pleated sheet structure (1.5).
8. Any three phospholipids (3).

ST. GREGORIOS DENTAL COLLEGE

Reg. No.: .....

First Year BDS Degree Supplementary II Internal Examinations, May 2024
General Human Physiology and Biochemistry
(2016 Scheme)

Time: 3 hrs **Max marks: 70**

- **Answer all questions to the point neatly and legibly • Do not leave any blank pages between answers • Indicate the question number correctly for the answer in the margin space**
- **Answer all parts of a single question together • Leave sufficient space between answers**
- **Draw Diagrams wherever necessary**
- **Write section A and section B in separate answer books (32 pages). Do not mix up questions from section A and section B**

Q P Code: 112002 **Section A: Physiology** **Max Marks: 35**

Essay: **(2+6+2=10)**

1. Define pain. Sketch out the pain pathway. Mention the referred pain. CO1& CO2 K2

Short Notes: **(2x5=10)**

2. Discuss the physiological actions of thyroxine. CO2, K3
3. Structure and transmissions of neuromuscular junction. CO1, K2

Answer Briefly: **(5x3=15)**

4. Spermatogenesis. CO1, K2
5. Presbyopia and its correction. CO2, K3
6. Functions of middle ear. CO2, K3
7. Draw a neat labelled diagram of taste pathway. CO1, K2
8. Dwarfism. CO1, K3

Q P Code: 113002 **Section B: Biochemistry** **Max Marks: 35**

Essay: **(4+4+1+1=10)**

1. Describe absorption, transport, storage and excretion of iron in the body. CO2, K2

Short Notes:

2. Explain detoxification of ammonia in liver. Mention two disorders associated with it. CO3,K3**(3+2=5)**
3. Write the functions and deficiency of calcitriol. CO1&CO3, K3 **(3+2=5)**

Answer Briefly: **(5x3=15)**

4 Beri-beri. CO3, K3
5. Metabolic acidosis. CO4, K3
6. Transmethylation and its significance. CO3, K2
7. Deficiency of retinol. CO3, K3
8. Dental fluorosis. CO3, K3

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ST.GREGORIOS DENTAL COLLEGE

Reg. No.: .....

First Year BDS Degree Supplementary II Internal Answer Key, May 2024

General Human Physiology and Biochemistry

(2016 Scheme)

Time: 3 hrs **Max marks: 70**

• Answer all questions to the point neatly and legibly • Do not leave any blank pages between answers • Indicate the question number correctly for the answer in the margin space

• Answer all parts of a single question together • Leave sufficient space between answers

• Draw Diagrams wherever necessary

• Write section A and section B in separate answer books (32 pages). Do not mix up questions from section A and section B

Q P Code: 112002 **Section A: Physiology** **Max Marks: 35**

Essay: **(2+6+2=10)**

1. Definition of pain, Trace lateral spinothalamic tract – mention origin, course, Termination. Definition of referred pain with examples.

Short Notes: **(2x5=10)**

2. Explain the various metabolic actions of thyroxine.
3. NMJ- structure, transmission.

Answer Briefly: **(5x3=15)**

4. Steps of spermatogenesis, diagrams.
5. Presbyopia – causes and correction.
6. Various functions of middle ear.
7. Trace taste pathway – diagram and explanation.
8. Dwarfism- causes, symptoms and manifestations.

Q P Code: 113002 **Section B: Biochemistry** **Max Marks: 35**

Essay:

1. Iron absorption**(4),**Transport **(4)**, Storage **(1)** and excretion**(1).**

Short Notes:

2. Urea cycle**(3),** Any two hyperammoninemia conditions.**(2).**
3. Vitamin D functions**(3)**,deficiency**(2).**

Answer Briefly:

4. Deficiency of Vitamin B1 **(3)**
5. Causes **(2)** and compensatory mechanism **(1)** of metabolic acidosis.
6. Transmethylation reaction **(2)**, Important products formed. **(1)**
7. Any three deficiency of retinol. **(3)**
8. Fluoride toxicity **(1)** and its complications **(2)**.

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ST.GREGORIOS DENTAL COLLEGE

Reg. No.: .....

First Year BDS Degree Supplementary I Internal Examinations, April 2024
General Human Physiology and Biochemistry
(2016 Scheme)

Time: 3 hrs **Max marks: 70**

- **Answer all questions to the point neatly and legibly • Do not leave any blank pages between answers • Indicate the question number correctly for the answer in the margin space**
- **Answer all parts of a single question together • Leave sufficient space between answers**
- **Draw Diagrams wherever necessary**
- **Write section A and section B in separate answer books (32 pages). Do not mix up questions from section A and section B**

Q P Code: 112002 **Section A: Physiology** **Max Marks: 35**

Essay: **(3+3+4=10)**

1. What is the composition and functions of saliva. Describe the regulation of secretion of saliva. CO2, K3

Short Notes: **(2x5=10)**

2. Define GFR. Explain the determinants of GFR. CO2, K2
3. ABO system of Blood groupingand Hazards of Blood Transfusion. CO2, K4

Answer Briefly: **(5x3=15)**

4. Platelets. CO1, K2
5. Typical ECG. CO1, K2
6. Vital Capacity. CO2, K3
7. Hypoxic hypoxia. CO1, K2
8. Baroreceptor reflex mechanism for regulation of ABP. CO2, K2

Q P Code: 113002 **Section B: Biochemistry** **Max Marks: 35**

Essay: **(6+4=10)**

1. Classify enzymes with one example and its reaction. Explain any four factors affecting enzyme activity. CO1, K2

Short Notes:

2. Explain the process of glycogenolysis and its regulation. CO3, K3 **(3+2=5)**
3. Describe ketogenesis and mention complications associated with excess ketone body formation. CO3, K3 **(3+2=5)**

Answer Briefly: **(5x3=15)**

4 Creatinine clearance test. CO4, K3
5. Hyperuricemia. CO3, K3
6. Immunoglobulins. CO1, K2
7. Differential diagnosis of jaundice. CO4, K3
8. Lactose intolerance. CO3, K3

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ST.GREGORIOS DENTAL COLLEGE

Reg. No.: .....

First Year BDS Degree Supplementary I Internal Answer Key, April 2024
General Human Physiology and Biochemistry
(2016 Scheme)

Time: 3 hrs **Max marks: 70**

- **Answer all questions to the point neatly and legibly • Do not leave any blank pages between answers • Indicate the question number correctly for the answer in the margin space**
- **Answer all parts of a single question together • Leave sufficient space between answers**
- **Draw Diagrams wherever necessary**
- **Write section A and section B in separate answer books (32 pages). Do not mix up questions from section A and section B**

Q P Code: 112002 **Section A: Physiology** **Max Marks: 35**

Essay: **(3+3+4=10)**

1. Composition, functions of saliva, Mechanism of regulation and diagrams.

Short Notes: **(2x5=10)**

2. Definition of GFR, Determinants – capillary hydrostatic pressure, oncotic pressure, Bowman's capsule, hydrostatic pressure. Tubuloglomerular feedback.
3. ABO Blood grouping, antigens and antibodies. Relevant hazards of transfusion.

Answer Briefly: **(5x3=15)**

4. Platelets – structure and functions.
5. Normal ECG – diagrams, waves and intervals.
6. Definition of Vital capacity, Normal value.
7. Definition and features of Hypoxic hypoxia.
8. Flow chart of Baroreceptor reflex mechanism.

Q P Code: 113002 **Section B: Biochemistry** **Max Marks: 35**

Essay:

1. Mention six enzyme classes with examples and reactions. **(6),** Any four factors affecting enzyme activity **(4).**

Short Notes:

2. Degradation of glycogen into glucose **(3),**
   Regulation of glycogen phosphorylase **(2).**
3. Ketone body formation (3),ketosis and ketoacidosis**(2).**

Answer Briefly: **(5x3=15)**

4. Formula, normal range and significance.
5. Uric acid accumulation and its causes.
6. Functions of five antibodies.
7. Diagnosis to identify hemolytic, hepatic and obstructive jaundice.
8. causes and complications of lactose accumulation.

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ST.GREGORIOS DENTAL COLLEGE, CHELAD

Reg. No.: .....

First Year l BDS Degree Regular Model Examinations, December 2023
General Human Physiology and Biochemistry
(2016 Scheme)

Time: 3 hrs **Max marks: 70**

- Answer all questions to the point neatly and legibly • Do not leave any blank pages between answers • Indicate the question number correctly for the answer in the margin space
- Answer all parts of a single question together • Leave sufficient space between answers
- Draw Diagrams wherever necessary
- Write section A and section B in separate answer books (32 pages). Do not mix up questions from section A and section B

Q P Code: 112002 **Section A: Physiology** **Max Marks: 35**

(2+4+3+1=10)

Essay:

1. Define blood pressure and mention its normal values. Describe the determinants of arterial blood pressure. Explain short term regulation of BP. Mention hypertension. (CO2, K2)

(2x5=10)

Short Notes:

2. What is pain? Sketch and label the pain pathway. Mention referred pain.(CO2,K2)
3. Describe transport of carbon dioxide in blood and Haldane's effect. (CO2, K2)

(5x3=15)

Answer Briefly:

4. Rh incompatibility. (CO2, K3)
5. Digestive enzymes of pancreas. (CO1, K2)
6. List the contraceptive methods in females. (CO2, K2)
7. Cushing's syndrome. (CO1, K2)
8. Micturition reflex. (CO1, K2)

Q P Code: 113002 **Section B: Biochemistry** **Max Marks: 35**

(2+8=10)

Essay:

1. Describe respiratory and renal mechanism in acid base balance. (CO1+CO4, K4)

Short Notes:

2. Explain the causes and differential diagnosis of jaundice. (CO4, K4) **(2+3=5)**
3. Evaluate the role of five factors that affect enzyme activity. (CO1,K2) **(5)**

(5x3=15)

Answer Briefly:

4 Gout. (CO5, K4)
5. Dental fluorosis. (CO4, K3)
6. Creatinine clearance test. (CO4, K3)
7. Protein Caloric Malnutrition. (CO3, K3)
8. How diabetes mellitus leads to metabolic acidosis. (CO3, K4)

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ST.GREGORIOS DENTAL COLLEGE, CHELAD

Reg. No.: .....

First Year BDS Degree Regular Model Examinations December 2023
General Human Physiology and Biochemistry – Answer key.
(2016 Scheme)

Time: 3 hrs **Max marks: 70**

- **Answer all questions to the point neatly and legibly • Do not leave any blank pages between answers • Indicate the question number correctly for the answer in the margin space**
- **Answer all parts of a single question together • Leave sufficient space between answers**
- **Draw Diagrams wherever necessary**
- **Write section A and section B in separate answer books (32 pages). Do not mix up questions from section A and section B**

Q P Code: 112002 **Section A: Physiology** **Max Marks: 35**

Essay: **(2+4+3+1=10)**

1. Definition – BP, Normal value – 120/80 mmHg, determinants – CO, HR, velocity of blood flow, peripheral resistance, venous return, total blood volume. VMC – sino-aortic reflex mechanism, CNS ischemic response, Hypertension - definition.

Short Notes: **(2x5=10)**

2. Definition of pain – Trace the pathway, lateral spinothalamic tract. Referred pain - examples and explanations.
3. CO_2 transport methods – dissolved form, carbonic acid, bicarbonate, carbaminocompounds. Haldane's effect.

Answer Briefly: **(5x3=15)**

4. Rh incompatibility – types.
5. Major digestive enzymes of pancreas.
6. Female contraceptive methods – any three.
7. Cushing's syndrome – cause and features.
8. Flow chart of Micturition reflex.

Q P Code: 113002 **Section B: Biochemistry** **Max Marks: 35**

Essay:

1. Respiratory mechanism (2), Renal mechanism (8).

Short Notes:

2. Causes of jaundice (2), differential diagnosis of jaundice (3).
3. Substrate concentration, enzyme concentration, temperature, pH, activators, Inhibitors (any five) – (5)

Answer Briefly:

4 Causes and features of primary and secondary gout. (3)
5. Fluoride toxicity on teeth. (3)
6. Creatinine clearance test formula, normal range and condition. (3)
7. Kwashiorkor and Marasmus. (3)
8. Diabetes mellitus activates lipolysis and ketogenesis which affect acidosis. (3)

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ST.GREGORIOS DENTAL COLLEGE

Reg. No.: .....

First Year BDS Degree Regular III Internal Examinations, September 2023
General Human Physiology and Biochemistry
(2016 Scheme)

Time: 3 hrs **Max marks: 70**

• Answer all questions to the point neatly and legibly • Do not leave any blank pages between answers • Indicate the question number correctly for the answer in the margin space
• Answer all parts of a single question together • Leave sufficient space between answers
• Draw Diagrams wherever necessary
• Write section A and section B in separate answer books (32 pages). Do not mix up questions from section A and section B

Q P Code: 112002 **Section A: Physiology** **Max Marks: 35**

Essay: **(2+4+3+1=10)**

1. Define thyroid hormones. Explain the mechanism of thyroid hormone synthesis. How thyroid hormones involvedin metabolism. Mention Myxedema.(CO3, K4)

Short Notes: **(2x5=10)**

2. Explain visual pathway with diagram. (CO2, K2)
3. Neuromuscular junction structure and transmission.(CO2, K2)

Answer Briefly: **(5x3=15)**

4. Any three functions of growth hormone. (CO1, K2)
5. Functions of middle ear.(CO1, K2)
6. Thermoregulatory responses on cold climate.(CO2, K3)
7. Cushing's syndrome. (CO1, K2)
8. Spermatogenesis. (CO1, K2)

Q P Code: 113002 **Section B: Biochemistry** **Max Marks: 35**

Essay: **(3+4+3=10)**

1. Explain the role of carnithine in oxidation of fatty acid. Enumerate beta oxidation of palmitic acid and its energetics.(CO1&CO3, K3)

Short Notes:

2. Describe the steps involved in detoxification of ammonia and its associated disorders.(CO3, K2) **(3+2=5)**
3. What is the normal ranges of fasting, random and post prandial blood glucose. Discuss the regulation of blood sugar in fed state. (CO3, K4) **(2+3=5)**

Answer Briefly: **(5x3=15)**

4 Biologically important compounds derived from glycine. (CO1, K2)
5. Oral glucose tolerance test and its interpretation. (CO6, K4)
6. Ketosis and mention two causes of ketosis. (CO3, K2)
7. Add a note on three disorders of aromatic aminoacid metabolism. (CO3, K2)
8. Transamination and its significance. (CO3, K2)

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ST.GREGORIOS DENTAL COLLEGE

Reg. No.: .....

First Year BDS Degree Regular III Internal Examinations, September 2023
General Human Physiology and Biochemistry – Answer key.
(2016 Scheme)

Time: 3 hrs **Max marks: 70**

- **Answer all questions to the point neatly and legibly • Do not leave any blank pages between answers • Indicate the question number correctly for the answer in the margin space**
- **Answer all parts of a single question together • Leave sufficient space between answers**
- **Draw Diagrams wherever necessary**
- **Write section A and section B in separate answer books (32 pages). Do not mix up questions from section A and section B**

Q P Code: 112002 **Section A: Physiology** **Max Marks: 35**

Essay:

1. Thyroid hormones – Definition (2). Thyroid hormone synthesis – diagrams with explanations (4). Functions of thyroid hormones on metabolism (3). Myxedema cause and symptoms (1).

(2x5=10)

Short Notes:

2. Visual pathway – diagram and explanation.
3. NMJ – diagrams, explanations, transmission.

(5x3=15)

Answer Briefly:

4. Growth hormone – three functions.
5. Middle ear – any three functions.
6. Thermoregulation centers, heat gain mechanisms and prevention of heat loss.
7. Cushing's syndrome – cause and features.
8. spermatogenesis – Definition and stages.

Q P Code: 113002 **Section B: Biochemistry** **Max Marks: 35**

Essay:

1. Carnithine transport system (3), four steps in beta oxidation (4), energetics of beta oxidation of palmitic acid (3).

Short Notes:

2. Steps in urea cycle (3), hyper ammonemia (2).
3. Normal ranges (FBS :70-100 mg/dl, RBS :<140 mg/dl, PPBS: 120-140 mg/dl) (2), Action of insulin in hyperglycemic condition. (3)

Answer Briefly:

4. Formation and functions of any three compounds (heme, glutathione, bile acids, purines, creatine, collagen) (3)
5. Preparation of patient, procedure and graphical representation of normal, decreased and increased glucose tolerance curve. (3)
6. Ketonemia and ketonuria in fasting and diabetes mellitus condition. (3)
7. Causes and clinical features of any three disorders (PKU, Tyrosinemia, Alkaptonuria, albinism, hartnup's disease) (3)
8. Definition, reaction of transaminases, significance of transamination reaction. (3)

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ST.GREGORIOS DENTAL COLLEGE

Reg. No.: .....

First Year BDS Degree Regular II Internal Examinations, June 2023
General Human Physiology and Biochemistry
(2016 Scheme)

Time: 3 hrs **Max marks: 70**

- **Answer all questions to the point neatly and legibly • Do not leave any blank pages between answers • Indicate the question number correctly for the answer in the margin space**
- **Answer all parts of a single question together • Leave sufficient space between answers**
- **Draw Diagrams wherever necessary**
- **Write section A and section B in separate answer books (32 pages). Do not mix up questions from section A and section B**

Q P Code: 112002 **Section A: Physiology** **Max Marks: 35**

Essay: **(2+5+3=10)**

1. Define gastric secretions. Explain the phases of gastric secretion and regulation. Add a note on Peptic ulcer. CO1, K2

Short Notes: **(2x5=10)**

2. Explain the two methods of O_2 transport with O_2 dissociation curve. CO2, K2
3. Define GFR and explain the factors maintaining GFR. CO1, K2

Answer Briefly: **(5x3=15)**

4. Timed Vital Capacity. CO1, K2
5. Functions of liver. CO3, K3
6. Short term regulation of Blood pressure. CO3, K2
7. Blood transfusion reactions. CO2, K2
8. ADH (Vasopressin). CO1, K2

Q P Code: 113002 **Section B: Biochemistry** **Max Marks: 35**

Essay: **(7+3=10)**

1. Explain enzyme classification with one example. Describe diagnostic importance of three enzymes. CO1&CO4, K4

Short Notes: **(2x5=10)**

2. Discuss biochemical functions of Vitamin A. CO1, K2
3. Outline the reactions of gluconeogenesis from Lactate. CO3, K2

Answer Briefly: **(5x3=15)**

4 Regulation of blood calcium level. CO3, K2
5. Lactose intolerance. CO2, K2
6. Oxidative phosphorylation. CO3, K2
7. Immunoglobulins. CO1, K2
8. Substrate level phosphorylation with two examples. CO3, K2

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ST.GREGORIOS DENTAL COLLEGE

Reg. No.: .....

First Year BDS Degree Regular II Internal Examinations Answer Key, June 2023
General Human Physiology and Biochemistry
(2016 Scheme)

Time: 3 hrs **Max marks: 70**

- **Answer all questions to the point neatly and legibly • Do not leave any blank pages between answers • Indicate the question number correctly for the answer in the margin space**
- **Answer all parts of a single question together • Leave sufficient space between answers**
- **Draw Diagrams wherever necessary**
- **Write section A and section B in separate answer books (32 pages). Do not mix up questions from section A and section B**

Q P Code: 112002 **Section A: Physiology** **Max Marks: 35**

Essay: **(2+5+3=10)**

1. Definition of gastric secretion (2), Regulation of gastric secretion (5), Peptic ulcer (3).

Short Notes: **(2x5=10)**

2. O_2 Transport (3), O_2-Hb dissociation curve and factors (2).
3. GFR definition (2), Factors (3)

Answer Briefly: **(5x3=15)**

4. Definition of Timed Vital Capacity (1), FEV_1, FEV_2, FEV_3 (2).
5. Functions of Liver (3).
6. Sino-aortic reflex (2), CNS ischemic response (1).
7. Blood transfusion reactions (3).
8. ADH functions (3).

Q P Code: 113002 **Section B: Biochemistry** **Max Marks: 35**

Essay: **(7+3=10)**

1. Definition of seven classes of enzymes and one example in each class with Reaction (7). Any three enzymes used as diagnostic markers (3).

Short Notes: **(2x5=10)**

2. Retinal and Retinol involved in vision (3). Role of Retinoic acid in metabolism, growth and differentiation (2).
3. Describe steps involved in synthesis of glucose from lactate (5).

Answer Briefly: **(5x3=15)**

4 Actions of Parathyroid hormone (1), Calcitriol (1) and Calcitonin (1) on bone, kidney and Intestine.
5. Lactase deficiency (1), Production of H_2, CO_2 and acids by bacterial fermentation (1), abdominal cramps and flatulence (1).
6. Describe chemiosmotic hypothesis (3).
7. Functions of IgG, IgA, IgM, IgD and IgE (3).
8. Direct ATP synthesis without ETC (1), Two examples with reactions (2)

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ST.GREGORIOS DENTAL COLLEGE

Reg. No.: .....

First Year BDS Degree Regular I Internal Examinations March 2023
General Human Physiology and Biochemistry
(2016 Scheme)

Time: 3 hrs **Max marks: 70**

- **Answer all questions to the point neatly and legibly • Do not leave any blank pages between answers • Indicate the question number correctly for the answer in the margin space**
- **Answer all parts of a single question together • Leave sufficient space between answers**
- **Draw Diagrams wherever necessary**
- **Write section A and section B in separate answer books (32 pages). Do not mix up questions from section A and section B**

Q P Code: 112002 **Section A: Physiology** **Max Marks: 35**

Essay: **(7+3=10)**

1. Explain the phases of cardiac cycle with the help of suitable diagrams. How can you link cardiac cycle with ECG and heart sounds. CO4, K4

Short Notes: **(2x5=10)**

2. Intrinsic mechanism of blood coagulation. CO2, K2
3. What is deglutition? Explain the pharyngeal stage of deglutition. How it is regulated. CO4, K3

Answer Briefly: **(5x3=15)**

4. Mastication. CO1, K2
5. Erythropoiesis. CO1, K2
6. Determinants of cardiac output. CO3, K2
7. Neutrophil. CO1, K2
8. Features of cardiac muscles. CO1, K2

Q P Code: 113002 **Section B: Biochemistry** **Max Marks: 35**

Essay: **(6+4=10)**

1. Explain the structural organization of proteins with example. Add a note on protein denaturation. CO1, K2

Short Notes: **(2x5=10)**

2. Heteropolysaccharides and its functions. CO1, K2
3. Describe the classification of compound lipids with examples and its functions. CO3, K2

Answer Briefly: **(5x3=15)**

4 Dietary fibers. CO2, K2
5. Essential aminoacids. CO1, K2
6. Polyunsaturated fatty acids. CO1, K2
7. Biologically important peptides. CO1, K2
8. Functions of cholesterol. CO3, K2

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ST.GREGORIOS DENTAL COLLEGE

Reg. No.: .....

First Year BDS Degree Regular I Internal Examinations, Answer Key, March 2023

General Human Physiology and Biochemistry

(2016 Scheme)

Time: 3 hrs **Max marks: 70**

• Answer all questions to the point neatly and legibly • Do not leave any blank pages between answers • Indicate the question number correctly for the answer in the margin space

• Answer all parts of a single question together • Leave sufficient space between answers

• Draw Diagrams wherever necessary

• Write section A and section B in separate answer books (32 pages). Do not mix up questions from section A and section B

Q P Code: 112002 **Section A: Physiology** **Max Marks: 35**

Essay: **(7+3=10)**

1. Cardiac cycle phases, Normal timings, Diagrammatic representation, Correlation with ECG and heart sounds.

Short Notes: **(2x5=10)**

2. Mechanism, Coagulation Factors, Pathway representation, clot retraction.
3. Define deglutition, Explain the pharyngeal stage, deglutition reflex, diagram desirable.

Answer Briefly: **(5x3=15)**

4. Mastication – Brief explanation.
5. Erythropoiesis – definition, Stages.
6. Explain the determinants of cardiac output. Must be mention –force of contraction, heart rate, venous return etc.
7. Neutrophil – feature and functions.
8. Cardiac muscles – structure and features.

Q P Code: 113002 **Section B: Biochemistry** **Max Marks: 35**

Essay: **(6+4=10)**

1. Primary, secondary, tertiary, quaternary structure with example. Add a note on protein denaturation.

Short Notes: **(2x5=10)**

2. Definition, examples and functions.
3. Classification, examples and functions.

Answer Briefly: **(5x3=15)**

4 Definition, categories, diet benefits.
5. Histidine, isoleucine, lysine ....etc with functions.
6. Omega-3-fatty acids, Omega-6- fatty acids...itsimportance.
7. Insulin, glucagon, ADH, oxytocin etc, and its functions.
8. Main functions of cholesterol.

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ST.GREGORIOS DENTAL COLLEGE

Reg. No.: .....

First Year BDS Degree Supplementary Internal Examination August 2023
General Human Physiology and Biochemistry
(2016 Scheme)

Time: 3 hrs **Max marks: 70**

- **Answer all questions to the point neatly and legibly • Do not leave any blank pages between answers • Indicate the question number correctly for the answer in the margin space**
- **Answer all parts of a single question together • Leave sufficient space between answers**
- **Draw Diagrams wherever necessary**
- **Write section A and section B in separate answer books (32 pages). Do not mix up questions from section A and section B**

Q P Code: 112002 **Section A: Physiology** **Max Marks: 35**

Essay: **(2+6+2=10)**

1. Define Cardiac output and describe the factors regulating cardiac output. Briefly describe any one method for its determination. CO1, K2

Short Notes: **(2x5=10)**

2. Describe transport of CO_2 in blood and Haldane's effect. CO2, K2
3. Describe the events and control of second stage of deglutition. CO1&CO2, K3

Answer Briefly: **(5x3=15)**

4. Referred pain. CO1, K2
5. Functions of middle ear. CO3, K3
6. Re-absorption of water in renal tubules. CO2, K2
7. Mention the causes and clinical features of acromegaly. CO3, K3
8. Pernicious anemia. CO2, K2

Q P Code: 113002 **Section B: Biochemistry** **Max Marks: 35**

Essay: **(10)**

1. Describe five different types of enzyme inhibitions with examples. CO1, K2

Short Notes:

2. Explain transamination reaction with example and its significance. CO2, K2 **(5)**
3. Describe the formation, activation and functions of vitamin D. CO3, K3 **(1+2+2=5)**

Answer Briefly: **(5x3=15)**

4 Key gluconeogenic enzymes. CO1, K2
5. Protein energy malnutrition. CO3, K3
6. Differential diagnosis of jaundice. CO3, K3
7. Ketogenesis and its significance. CO2, K2
8. Genetic code. CO2, K2

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ST. GREGORIOS DENTAL COLLEGE

Reg. No.: .....

First Year BDS Degree Supplementary Internal Examination Answer Key, August 2023

General Human Physiology and Biochemistry

(2016 Scheme)

Time: 3 hrs. **Max marks: 70**

- **Answer all questions to the point neatly and legibly • Do not leave any blank pages between answers • Indicate the question number correctly for the answer in the margin space**
- **Answer all parts of a single question together • Leave sufficient space between answers**
- **Draw Diagrams wherever necessary**
- **Write section A and section B in separate answer books (32 pages). Do not mix up questions from section A and section B**

Q P Code: 112002 **Section A: Physiology** **Max Marks: 35**

Essay: **(2+6+2=10)**

1. Definition of Cardiac output, factors – Heart rate, stroke volume, contractility etc. Any one method of determination like Fick principle, Thermodilution, Echocardiography etc.

Short Notes: **(2x5=10)**

2. Four ways of transport of CO2, Haldane's effect and its importance.
3. Events occurring during Pharyngeal stage.

Answer Briefly: **(5x3=15)**

4. Referred pain – definition with example.
5. Functions of middle ear – main three functions.
6. Re-absorption of water from different parts of renal tubules.
7. Causes – Over production of GH in adult, and specific symptoms of acromegaly.
8. Pernicious anemia – causes and symptoms.

Q P Code: 113002 **Section B: Biochemistry** **Max Marks: 35**

Essay: **(10)**

1. Reversible, irreversible, allosteric, feedback etc...with examples.

Short Notes:

2. Definition, examples, importance like synthesis and recycling of amino acid, Energy production, neurotransmitter synthesis etc. **(5)**
3. Formation and activation of Vit D – steps, Major functions of vitamin D. **(5)**

Answer Briefly: **(5x3=15)**

4 Pyruvate carboxylase, glucose-6-phosphatase, fructose-1,6-phosphatase etc.
5. Protein energy malnutrition – causes and disorders.
6. Blood bilirubin level, LFTs, PT, Hepatitis Panel etc.
7. Ketogenesis- definition and its significance.
8. Genetic code – definition and key features.

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ST.GREGORIOS DENTAL COLLEGE

Reg. No.: .....

First Year l BDS Degree RegularModel Examinations February 2022

General Human Physiology and Biochemistry

(2016 Scheme)

Time: 3 hrs **Max marks: 70**

• Answer all questions to the point neatly and legibly • Do not leave any blank pages between answers • Indicate the question number correctly for the answer in the margin space

• Answer all parts of a single question together • Leave sufficient space between answers

• Draw Diagrams wherever necessary

• Write section A and section B in separate answer books (32 pages). Do not mix up questions from section A and section B

Q P Code: 112002 **Section A: Physiology** **Max Marks: 35**

Essay: **(2+4+2+2=10)**

1. What is hemostasis? Explain the intrinsic mechanism of blood coagulation. mention any two anticoagulants. Name any one disorder. CO1 & CO2, K3

Short Notes: **(2x5=10)**

2. Describe arterial BP. What are the determinants? CO1, K2
3. Describe the respiratory centers and neural regulation of respiration. CO2, K3

Answer Briefly: **(5x3=15)**

4. Referred pain. CO1, K2
5. Prolactin. CO1, K2
6. Contraception in females. CO2, K2
7. Micturition reflex. CO1, K2
8. Functions of Liver. CO1, K3

Q P Code: 113002 **Section B: Biochemistry** **Max Marks: 35**

Essay: **(1+6+3=10)**

1. Mention normal serum bilirubin level. Explain the steps involved in the formation andexcretion of bilirubin. Describe differential diagnosis of jaundice. CO1 & CO3, K3

Short Notes: **(2x5=10)**

2. Explain different types of enzyme inhibitions with one example. CO2, K2
3. Write the sources, biochemical functions and deficiency diseases of ascorbic acid. CO2, K2

Answer Briefly: **(5x3=15)**

4 DNA replication. CO1, K2
5. Steps in β-oxidation of fatty acids. CO2, K2
6. Digestion and absorption of carbohydrates. CO1, K2
7. Kidney function tests. CO3, K3
8. Transmethylation reaction and its significance.CO1, K2

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ST. GREGORIOS DENTAL COLLEGE

Reg. No.: .....

First Year l BDS Degree Regular Model Examinations Answer Key, February 2022
General Human Physiology and Biochemistry
(2016 Scheme)

Time: 3 hrs **Max marks: 70**

• Answer all questions to the point neatly and legibly • Do not leave any blank pages between answers • Indicate the question number correctly for the answer in the margin space
• Answer all parts of a single question together • Leave sufficient space between answers
• Draw Diagrams wherever necessary
• Write section A and section B in separate answer books (32 pages). Do not mix up questions from section A and section B

Q P Code: 112002 **Section A: Physiology** **Max Marks: 35**

Essay: **(2+4+2+2=10)**

1. Hemostasis – Definition. Steps of intrinsic mechanism of blood coagulation. Name any two anticoagulants. Name any one Bleeding disorder. CO1 & CO2

Short Notes: **(2x5=10)**

2. Definition of arterial BP, normal values, determinants.
3. Medullary and pontine respiratory centers, afferent and efferent fibers, its working Influence of higher centers and various receptors.

Answer Briefly: **(5x3=15)**

4. Definition.
5. Prolactin – source and functions.
6. Contraception in females – Different methods.
7. Micturition reflex – explain with flow chart.
8. Three main functions of liver.

Q P Code: 113002 **Section B: Biochemistry** **Max Marks: 35**

Essay: **(1+6+3=10)**

1. Normal serum bilirubin level. Role of macrophages and liver in formation andexcretion of bilirubin. CBC, LFTs- AST, ALT, ALP etc.

Short Notes: **(2x5=10)**

2. Competitive, non competitive, uncompetitive and mixed enzyme inhibitions with one example.
3. Sources, functions and deficiency diseases of ascorbic acid (scurvy).

Answer Briefly: **(5x3=15)**

4 DNA replication – definition and steps.
5. Activation, Transport and Beta oxidation cycle.
6. Role of different enzymes in different parts of alimentary canal.
7. Serum Creatinine, BUN, eGFR etc.
8. Definition of Transmethylation reaction and its significance in synthesis of nucleic acid, proteins, lipids and neurotransmitters

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ST.GREGORIOS DENTAL COLLEGE

Reg. No.: .....

First Year lll Internal BDS (2021 Batch) Degree Regular/Supplementary Examinations
December 2022
General Human Physiology and Biochemistry
(2016 Scheme)

Time: 3 hrs **Max marks: 70**

- **Answer all questions to the point neatly and legibly • Do not leave any blank pages between answers • Indicate the question number correctly for the answer in the margin space**
- **Answer all parts of a single question together • Leave sufficient space between answers**
- **Draw Diagrams wherever necessary**
- **Write section A and section B in separate answer books (32 pages). Do not mix up questions from section A and section B**

Q P Code: 112002 **Section A: Physiology** **Max Marks: 35**

Essay: **(5+2+3=10)**

1. Trace pain pathway from left leg, explain fibers and neurotransmitters. Add a note on referred pain.CO2, K2

Short Notes: **(2x5=10)**

2. Explain the functions of glucocorticoids and Cushing's syndrome.CO1, K2
3. Second stage of Deglutition.CO2, K3

Answer Briefly: **(5x3=15)**

4. Refractory errors of eye.CO1, K3
5. Taste Pathway.CO1, K2
6. Myxoedema.CO1, K2
7. Functions of bile.CO1, K2
8. Functions of Thalamus.CO1, K2

Q P Code: 113002 **Section B: Biochemistry** **Max Marks: 35**

Essay: **(1+1+5+3=10)**

1. Describe the sources, RDA, biochemical functions and deficiency manifestations of ascorbic acid.CO1 &CO3, K3

Short Notes: **(2x5=10)**

2. Explain the disorders associated with aromatic aminoacid metabolism.CO3, K2
3. Discuss in detail blood glucose regulation in the fasting state.CO3, K2

Answer Briefly: **(5x3=15)**

4.Role of kidney in acid base balance.CO4, K3
5. Significance of pentose phosphate pathway. CO3, K2
6. Hemolytic jaundice.CO3 & CO6, K4
7. Creatinine clearance test.CO4, K3
8. Diabetic ketoacidosis.CO3, K2

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ST.GREGORIOS DENTAL COLLEGE

Reg. No.: .....

First Year lll Internal BDS (2021 Batch) Degree Regular/Supplementary Examinations
Answer key, December 2022
General Human Physiology and Biochemistry
(2016 Scheme)

Time: 3 hrs **Max marks: 70**

• Answer all questions to the point neatly and legibly • Do not leave any blank pages between answers • Indicate the question number correctly for the answer in the margin space
• Answer all parts of a single question together • Leave sufficient space between answers
• Draw Diagrams wherever necessary
• Write section A and section B in separate answer books (32 pages). Do not mix up questions from section A and section B

Q P Code: 112002 **Section A: Physiology** **Max Marks: 35**

Essay: **(5+2+3=10)**

1. Trace lateral spinothalamic pathway, fibers, neurotransmitters, termination. Referred pain – definition, examples, dermatomal rule.

Short Notes: **(2x5=10)**

2. Actions of glucocorticoids in various metabolisms, Cushing's syndrome – hyper-Secretion of glucocorticoids, symtoms.
3. Explanations of the processes taking place in pharyngeal stage of deglutition.

Answer Briefly: **(5x3=15)**

4. Explain the causes and symptoms of myopia, hypermetropia, presbyopia etc
5. Trace and label Taste Pathway.
6. Hypothyroidism in adults – causes and symptoms.
7. Mention different functions of bile.
8. Sensory and motor functions of Thalamus, center for motor activity.

Q P Code: 113002 **Section B: Biochemistry** **Max Marks: 35**

Essay:

1.Sources(1), RDA(1), any five functions (5) deficiency(3)of ascorbic acid.

Short Notes: **(2x5=10)**

2. Any five disorders associated with aromatic aminoacid metabolism.
3. Action of hyperglycemic hormones.

Answer Briefly: **(5x3=15)**

4.Four mechanisms in kidney.
5. Importance of ribose sugar and NADPH.
6. Hemolytic jaundice – causes and diagnosis.
7. Creatinine clearance calculation and its significance.
8.Accumulation of ketone bodies in diabetes mellitus.

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ST. GREGORIOS DENTAL COLLEGE, CHELAD

Reg. No.: .....

First Year BDS Degree Regular II Internal Examinations September, 2022
General Human Physiology and Biochemistry
(2016 Scheme)

Time: 3 hrs **Max marks: 70**

- **Answer all questions to the point neatly and legibly • Do not leave any blank pages between answers • Indicate the question number correctly for the answer in the margin space**
- **Answer all parts of a single question together • Leave sufficient space between answers**
- **Draw Diagrams wherever necessary**
- **Write section A and section B in separate answer books (32 pages). Do not mix up questions from section A and section B**

Q P Code: 112002 **Section A: Physiology** **Max Marks: 35**

(1+3+4+2=10)

Essay:

1. What is saliva? Describe the mechanism of salivary secretion. How the composition of saliva determines its function. How saliva secretion is regulated. CO1&CO4, K4

Short Notes:

2. List the forms in which CO_2 is transported. Explain Haldane effect.CO1,K2 **(4+1=5)**
3. Define GFR and explain factors affecting GFR. CO1, K2 **(1+4=5)**

(5x3=15)

Answer Briefly:

4. Pulmonary surfactant and its functions. CO2, K2
5. Juxtaglomerular apparatus. CO1, K2
6. Vital capacity and its variations. CO3, K3
7. Sino-aortic reflex mechanism. CO2, K2
8. Digestive enzymes of pancreas. CO1, K2

Q P Code: 113002 **Section B: Biochemistry** **Max Marks: 35**

(6+4=10)

Essay:

1. Explain competitive inhibition of enzymes and its two clinical significances. Discuss the enzyme markers in cardiac and liver diseases. CO3 & CO4, K3

Short Notes:

2. Describe the absorption and transport of iron. CO2, K3 **(3+2+5)**
3. Deficiency manifestations of Vitamin A. CO3, K3 **(5)**

(5x3=15)

Answer Briefly:

4 Functions of Albumin. CO1, K2
5. Role of substrate concentration on enzyme activity. CO1, K2
6. Function, deficiency and toxicity of fluorine. CO4, K4
7. Mechanism of oxidative phosphorylation. CO3, K2
8. Principles of colorimetry. CO6, K3

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ST.GREGORIOS DENTAL COLLEGE, CHELAD

Reg. No.: .....

First Year BDS Degree Regular II Internal Examinations, Answer key, September 2022
General Human Physiology and Biochemistry
(2016 Scheme)

Time: 3 hrs **Max marks: 70**

- **Answer all questions to the point neatly and legibly • Do not leave any blank pages between answers • Indicate the question number correctly for the answer in the margin space**
- **Answer all parts of a single question together • Leave sufficient space between answers**
- **Draw Diagrams wherever necessary**
- **Write section A and section B in separate answer books (32 pages). Do not mix up questions from section A and section B**

Q P Code: 112002 **Section A: Physiology** **Max Marks: 35**

Essay: **(1+3+4+2=10)**

1. Definition of saliva, mechanism of primary and secondary secretion. Composition and major functions of saliva. Sympathetic and parasympathetic mechanism of regulation of saliva.

Short Notes:

2. Explain the four ways by which CO_2 is transported across the blood. Explain Haldane effect and its significance. **(4+1=5)**
3. Definition -GFR- normal value, factors affecting – capillary hydrostatic pressure, Colloidal osmotic pressure in glomerulus, Bauman's capsule hydrostatic pressure, tubuloglomerular feedback mechanism. **(1+4=5)**

Answer Briefly: **(5x3=15)**

4. Definition, composition and main functions.
5. JGA- structure, explanation of Macula densa, JG cells and extra glomerular mesangial cells.
6. Definition, normal value, variations in physiological and pathological conditions.
7. Sino-aortic reflex mechanism for controlling BP and HR – Baroreceptor and chemoreceptor mechanism.
8. Major proteolytic, lipolytic and amylolytic enzymes of pancreas.

Q P Code: 113002 **Section B: Biochemistry** **Max Marks: 35**

Essay:

1. Mechanism of competitive inhibition (4), Two clinical significances (2), marker Enzymes in liver and cardiac diseases (4).

Short Notes:

2. Absorption of iron (3), Transport of iron (2)
3. Deficiency of Vit A on vision, skin, growth and reproduction. (5)

Answer Briefly:

4 Any three functions of albumin – osmotic balance, transport, buffering action, Nutritive function. (3)
5. Graphical representation (2), mention significance of Km value (1)
6. Functions (1), deficiency (1) and toxicity (1) of fluorine.
7. Explain chemiosmotic theory (3).
8. Beer-Lambert's law (3).

ST. GREGORIOS DENTAL COLLEGE, CHELAD

Reg. No.: .....

First Year BDS Degree Regular I Internal Examinations, July 2022
General Human Physiology and Biochemistry
(2016 Scheme)

Time: 3 hrs **Max marks: 70**

- **Answer all questions to the point neatly and legibly • Do not leave any blank pages between answers • Indicate the question number correctly for the answer in the margin space**
- **Answer all parts of a single question together • Leave sufficient space between answers**
- **Draw Diagrams wherever necessary**
- **Write section A and section B in separate answer books (32 pages). Do not mix up questions from section A and section B**

Q P Code: 112002 **Section A: Physiology** **Max Marks: 35**

Essay: **(2+5+3=10)**

1. Define cardiac cycle with normal timings. Describe in detail about mechanical events and its correlation with arterial and ventricular pressure changes, volume Changes and heart sounds. CO4, K4

Short Notes: **(2x5=10)**

2. Erythropoiesis and mention factors influencing it. CO1, K2
3. Explain the Intrinsic and Extrinsic pathways of coagulation. CO2, K2

Answer Briefly: **(5x3=15)**

4. Mastication. CO1, K2
5. Pharyngeal stage of deglutition. CO2, K2
6. Pernicious anemia. CO1, K2
7. Typical electrocardiogram or Limb lead II record. CO1, K2
8. Cell mediated immunity. CO1, K3

Q P Code: 113002 **Section B: Biochemistry** **Max Marks: 35**

Essay: **(2+3+4+1=10)**

1. Define denaturation of proteins. What are the factors that affect denaturation? Describe the features of denatured product. Give one example. CO2, K2

Short Notes: **(2x5=10)**

2. Essential fatty acids and its functions. CO1, K3
3. Mention the composition of glycosaminoglycans and its functions with examples. CO1, K2

Answer Briefly: **(5x3=15)**

4 Glutathione and its significance. CO3, K3
5. Lipoproteins and its functions. CO1, K2
6. What are epimers? Mention two examples. CO1, K2
7. Label secondary structure of proteins. CO1, K2
8. Name three phospholipids with its composition and functions. CO1, K2

ST. GREGORIOS DENTAL COLLEGE, CHELAD

Reg. No.: .....

First Year BDS Degree Regular I Internal Examinations, Answer key July 2022
General Human Physiology and Biochemistry
(2016 Scheme)

Time: 3 hrs **Max marks: 70**

• Answer all questions to the point neatly and legibly • Do not leave any blank pages between answers • Indicate the question number correctly for the answer in the margin space
• Answer all parts of a single question together • Leave sufficient space between answers
• Draw Diagrams wherever necessary
• Write section A and section B in separate answer books (32 pages). Do not mix up questions from section A and section B

Q P Code: 112002 **Section A: Physiology** **Max Marks: 35**

Essay: **(2+5+3=10)**

1. Definition, normal timings, phases, graphical representation of pressure and volume changes – correlate with heart sounds.

Short Notes: **(2x5=10)**

2. Definition, stages, factors affecting it.
3. Flow chart of intrinsic and extrinsic pathways, clotting factors, explanations, clot retraction.

Answer Briefly: **(5x3=15)**

4. Mastication – Brief explanation.
5. Movements, diagram.
6. Cause, symptoms.
7. Diagram, explanations.
8. Role of T cells in developing immunity.

Q P Code: 113002 **Section B: Biochemistry** **Max Marks: 35**

Essay: **(2+3+4+1=10)**

1. Describe the structural alteration. (2), agents causing denaturation (3), Changes in the structure and functions of products (4), Any one example of denaturation process (1).

Short Notes: **(2x5=10)**

2. Linoleic and Linolenic acid (2), explain any three functions (3).
3. Aminosugar and uronic acid (2), example and functions (3).

Answer Briefly: **(5x3=15)**

4 components of glutathione (1), functions (2).
5. Lipids and protein parts present in lipoproteins (1.5), functions of four classes of lipoproteins (1.5).
6. Definition (1), two examples (2).
7. Draw and explain α helix (1.5) and β- pleated sheet structure (1.5).
8. Any three phospholipids (3).

ST. GREGORIOS DENTAL COLLEGE

First Year BDS Degree Regular III Internal Examinations, October 2021
General Human Physiology and Biochemistry
(2016 Scheme)

Time: 3 hrs **Max marks: 70**

- **Answer all questions to the point neatly and legibly • Do not leave any blank pages between answers • Indicate the question number correctly for the answer in the margin space**
- **Answer all parts of a single question together • Leave sufficient space between answers**
- **Draw Diagrams wherever necessary**
- **Write section A and section B in separate answer books (32 pages). Do not mix up questions from section A and section B**

Q P Code: 112002 **Section A: Physiology** **Max Marks: 35**

Essay: **(10)**

1. Name the hormones secreted by adrenal cortex. Describe the actions of glucocorticoids and describe the symptoms of Addison's disease. CO2 &CO3, K2

Short Notes: **(2x5=10)**

2. Explain the endometrial changes and hormonal regulation of female reproductive cycle. CO2, K2
3. Describe the visual pathway with the help of a diagram. CO2, K2

Answer Briefly: **(5x3=15)**

4 Thermoregulation in response to hot climate. CO3, K3
5. Oral contraceptives with mechanism of actions. CO3, K3
6. Functions of middle ear. CO2, K3
7. Mention the causes and clinical features of acromegaly. CO2, K2
8. Spermatogenesis. CO2, K2

Q P Code: 113002 **Section B: Biochemistry** **Max Marks: 35**

Essay: **(10)**

1. Describe the reactions of ammonia detoxification in liver and mention the causes of increased blood urea level. CO3, K3

Short Notes: **(2x5=10)**

2. Explain the functions and deficiency manifestations of ascorbic acid. CO2, K2
3. Describe the role of kidney in regulation of acid base balance. CO2, K3

Answer Briefly: **(5x3=15)**

4 Antigen detection by ELIZA. CO3, K3
5. Hyper uricemia and itscauses. CO3, K2
6. Metabolic Alkalosis. CO3, K2
7. Antibiotics interfering translation process. CO3, K2
8. Mention three differences between kwashiorkor and marasmus. CO2, K2

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ST. GREGORIOS DENTAL COLLEGE

First Year BDS Degree Regular III Internal Examinations, Answer Key, October 2021

General Human Physiology and Biochemistry

(2016 Scheme)

Time: 3 hrsMax marks: 70

- **Answer all questions to the point neatly and legibly • Do not leave any blank pages between answers • Indicate the question number correctly for the answer in the margin space**
- **Answer all parts of a single question together • Leave sufficient space between answers**
- **Draw Diagrams wherever necessary**
- **Write section A and section B in separate answer books (32 pages). Do not mix up questions from section A and section B**

Q P Code: 112002 Section A: Physiology Max Marks: 35

Essay: **(10)**

1. Name the hormones,Main actions of glucocorticoids, main symptoms of Addison's disease.

Short Notes: **(2x5=10)**

2. Different phasesand endometrial changes according to hormonal levels.
3. Visual pathway – diagram and explanations.

Answer Briefly: **(5x3=15)**

4 Role of hypothalamus, heat gain and heat loss mechanism.
5. Different oral contraceptives and its mechanisms.
6. Different functions of middle ear – transmission of sound, impedence matching amplification, tympanic reflex, pressure balance etc
7. Disorder due to increased GH secretion in adults – symptoms.
8. Spermatogenesis – stages.

Q P Code: 113002 Section B: Biochemistry Max Marks: 35

Essay: **(10)**

1. Urea cycle, Glutamine synthesis, causes of increased blood urea level – dehydration High protein diet, GI bleeding, heart failure etc.

Short Notes: **(2x5=10)**

2. Ascorbic acid - functions and deficiency – scurvy.
3. Role of kidney in regulation of acid base balance – different mechanisms.

Answer Briefly: **(5x3=15)**

4 Antigen detection by ELIZA- procedure.
5. Hyper uricemia – elevated level of uric acid in blood, main causes.
6. Metabolic Alkalosis- elevated blood pH, causes.
7. Aminoglycosides, tetracyclins, lincosamides etc.
8. Main three differences between kwashiorkor and marasmus.

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ST.GREGORIOS DENTAL COLLEGE

Reg. No.: .....

First Year BDS Degree Regular II Internal Examinations July 2021
General Human Physiology and Biochemistry
(2016 Scheme)

Time: 3 hrs **Max marks: 70**

- **Answer all questions to the point neatly and legibly • Do not leave any blank pages between answers • Indicate the question number correctly for the answer in the margin space**
- **Answer all parts of a single question together • Leave sufficient space between answers**
- **Draw Diagrams wherever necessary**
- **Write section A and section B in separate answer books (32 pages). Do not mix up questions from section A and section B**

Q P Code: 112002 **Section A: Physiology** **Max Marks: 35**

Essay: **(2+5+3=10)**1. Define gastric secretions. Explain the phases of gastric secretion and regulation. Add a note on Peptic ulcer. CO1, K2

Short Notes: **(2x5=10)**

2. Explain the two methods of O_2 transport with O_2 dissociation curve. CO2, K3
3. Define GFR and explain the factors maintaining GFR. CO1, K2

Answer Briefly: **(5x3=15)**

4. Timed Vital Capacity. CO1, K2
5. Functions of liver. CO3, K2
6. Short term regulation of Blood pressure. CO3, K3
7. Blood transfusion reactions. CO2, K4
8. ADH (Vasopressin). CO1,K2

Q P Code: 113002 **Section B: Biochemistry** **Max Marks: 35**

Essay: **(7+3=10)**

1. Explain enzyme classification with one example. Describe diagnostic importance of three enzymes. CO1&CO4, K4

Short Notes: **(2x5=10)**

2. Discuss biochemical functions of Vitamin A. CO1, K2
3. Outline the reactions of gluconeogenesis from Lactate. CO3, K2

Answer Briefly: **(5x3=15)**

4 Regulation of blood calcium level. CO3, K3
5. Lactose intolerance. CO2, K2
6. Oxidative phosphorylation. CO3, K2
7. Immunoglobulins. CO1, K2
8. Substrate level phosphorylation with two examples. CO3, K3

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ST.GREGORIOS DENTAL COLLEGE

Reg. No.: .....

First Year BDS Degree Regular II Internal Examinations, Answer Key,July 2021
General Human Physiology and Biochemistry
(2016 Scheme)

Time: 3 hrs **Max marks: 70**

- **Answer all questions to the point neatly and legibly • Do not leave any blank pages between answers • Indicate the question number correctly for the answer in the margin space**
- **Answer all parts of a single question together • Leave sufficient space between answers**
- **Draw Diagrams wherever necessary**
- **Write section A and section B in separate answer books (32 pages). Do not mix up questions from section A and section B**

Q P Code: 112002 **Section A: Physiology** **Max Marks: 35**

Essay: **(2+5+3=10)**1. Definition of gastric secretion (2), Regulation of gastric secretion (5), Peptic ulcer (3).

Short Notes: **(2x5=10)**

2. O_2 Transport (3), O_2-Hb dissociation curve and factors (2).
3. GFR definition (2), Factors (3)

Answer Briefly: **(5x3=15)**

4. Definition of Timed Vital Capacity (1), FEV_1, FEV_2, FEV_3 (2).
5. Functions of Liver (3).
6. Sino-aortic reflex (2), CNS ischemic response (1).
7. Blood transfusion reactions (3).
8. ADH functions (3).

Q P Code: 113002 **Section B: Biochemistry** **Max Marks: 35**

Essay: **(7+3=10)**

1. Definition of seven classes of enzymes and one example in each class with Reaction (7). Any three enzymes used as diagnostic markers (3).

Short Notes: **(2x5=10)**

2. Retinal and Retinol involved in vision (3). Role of Retinoic acid in metabolism, growth and differentiation (2).
3. Describe steps involved in synthesis of glucose from lactate (5).

Answer Briefly: **(5x3=15)**

4 Actions of Parathyroid hormone (1), Calcitriol (1) and Calcitonin (1) on bone, kidney and Intestine.

5. Lactase deficiency (1), Production of H_2, CO_2 and acids by bacterial fermentation (1), abdominal cramps and flatulence (1).
6. Describe chemiosmotic hypothesis (3).
7. Functions of IgG, IgA, IgM, IgD and IgE (3).
8. Direct ATP synthesis without ETC (1), Two examples with reactions (2)

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ST. GREGORIOS DENTAL COLLEGE, CHELAD
I Internal Examination - April 2021

Time: 3-hour **Total marks: 70 marks**

General Human Physiology and Biochemistry

- Draw diagrams wherever necessary

Section A - Physiology

Structured Essay

1. Define cardiac output and cardiac index with normal values. Explain the factors regulating cardiac output. CO1 &CO3, K2

(3+7=10)

Short Notes

2. Intrinsic mechanism of coagulation. CO1, K2
3. Erythropoiesis and factors affecting it CO2, K2

(2x5=10)

Brief Notes

4. Rennin-angiotensin mechanism. CO2, K2
5. Typical electrocardiogram.CO1, K3
6. Cell mediated immunity.CO1, K2
7. Pernicious anemia and megaloblastic anemia.CO3, K2
8. Features of cardiac muscles. CO1, K2

(5x3=15)

Section B - Biochemistry

Structured Essay

(8+2=10)

1. Describe the structural organization of proteins. Mention the salient features of denatured protein. CO2, K4

Short Notes

(2x5=10)

2. What are mucopolysaccharides. Explain the functions and composition of four mucopolysaccharides. CO1, K2
3. Name essential fatty acids. Describe its importance. CO1, K2

Brief Notes

(5x3=15)

4. Epimers. CO2, K2
5. Immunoglobulins. CO1, K3
6. Dietary fibres. CO3, K3
7. Biologically important nucleotides.CO2, K2
8. Composition and functions of any three phospholipid. CO2, K2

ST. GREGORIOS DENTAL COLLEGE, CHELAD
I Internal Examination, Answer key - April 2021

Time: 3-hourTotal marks: 70 marks

General Human Physiology and Biochemistry

- Draw diagrams wherever necessary

Section A - Physiology

Structured Essay

1. Definition of cardiac output, cardiac index, normal values. Important Factors regulating cardiac output.

(3+7=10)

Short Notes

2. Intrinsic mechanism of coagulation – Draw the pathway with explanations.
3. Erythropoiesis- definition, stages and factors affecting the process.

(2x5=10)

Brief Notes

4. Rennin-angiotensin mechanism- explanation with chart.
5. Typical electrocardiogram- drawing with explanations of different waves and intervals.
6. Cell mediated immunity – definition and mechanism.
7. Pernicious anemia and megaloblastic anemia – causes and symptoms.
8. Features of cardiac muscles – important features.

(5x3=15)

Section B - Biochemistry

Structured Essay(8+2=10)

1. Primary, secondary, tertiary and quaternary structure with diagrams, Mention the salient features of denatured protein.

Short Notes (2x5=10)

2. Mucopolysaccharides – definition, functions and composition of four mucopolysaccharides.
3. Omega-3 and Omega-6 fatty acids- its importance.

Brief Notes (5x3=15)

4. Epimers – definition and functions.
5. Immunoglobulins – types and functions
6. Dietary fibers – importance.
7. ATP, cAMP, NAD+, NADP+. GTP, UTP, CTP etc.
8. Composition and functions of any three phospholipid

ST.GREGORIOS DENTAL COLLEGE

Reg. No.: .....

First Year BDS Degree Regular III Internal Examinations May 2020
General Human Physiology and Biochemistry
(2016 Scheme)

Time: 3 hrs **Max marks: 70**

- **Answer all questions to the point neatly and legibly • Do not leave any blank pages between answers • Indicate the question number correctly for the answer in the margin space**
- **Answer all parts of a single question together • Leave sufficient space between answers**
- **Draw Diagrams wherever necessary**
- **Write section A and section B in separate answer books (32 pages). Do not mix up questions from section A and section B**

Q P Code: 112002 **Section A: Physiology** **Max Marks: 35**

Essay:

1. Define thyroid hormones. Explain the mechanism of thyroid hormone synthesis. How thyroid hormones involved in metabolism. Mention Myxedema. (CO3, K2) **(2+4+3+1=10)**

Short Notes: **(2x5=10)**

2. Explain visual pathway with diagram. (CO2, K2)
3. Neuromuscular junction structure and transmission. (CO2, K2)

Answer Briefly: **(5x3=15)**

4. Any three functions of growth hormone. (CO1, K2)
5. Functions of middle ear. (CO1, K2)
6. Thermoregulatory responses on cold climate. (CO2, K3)
7. Cushing's syndrome. (CO1, K2)
8. Spermatogenesis. (CO1, K2)

Q P Code: 113002 **Section B: Biochemistry** **Max Marks: 35**

Essay:

1. Explain the role of carnithine in oxidation of fatty acid. Enumerate beta oxidation of palmitic acid and its energetics. (CO1&CO3, K3) **(3+4+3=10)**

Short Notes:

2. Describe the steps involved in detoxification of ammonia and its associated disorders. (CO3, K2) **(3+2=5)**
3. What is the normal ranges of fasting, random and post prandial blood glucose. Discuss the regulation of blood sugar in fed state. (CO3, K3)**(2+3=5)**

Answer Briefly: **(5x3=15)**

4 Biologically important compounds derived from glycine. (CO1, K3)
5. Oral glucose tolerance test and its interpretation. (CO6, K4)
6. Ketosis and mention two causes of ketosis. (CO3, K3)
7. Add a note on three disorders of aromatic aminoacid metabolism. (CO3. K2)
8. Transamination and its significance. (CO3, K2)

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ST.GREGORIOS DENTAL COLLEGE

Reg. No.: .....

First Year BDS Degree Regular III Internal Examinations May 2020
General Human Physiology and Biochemistry – Answer key.
(2016 Scheme)

Time: 3 hrs **Max marks: 70**

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- **Draw Diagrams wherever necessary**
- **Write section A and section B in separate answer books (32 pages). Do not mix up questions from section A and section B**

Q P Code: 112002 **Section A: Physiology** **Max Marks: 35**

Essay:

1. Thyroid hormones – Definition (2). Thyroid hormone synthesis – diagrams with explanations (4). Functions of thyroid hormones on metabolism (3). Myxedema cause and symptoms (1).

Short Notes: **(2x5=10)**

2. Visual pathway – diagram and explanation.
3. NMJ – diagrams, explanations, transmission.

Answer Briefly: **(5x3=15)**

4. Growth hormone – three functions.
5. Middle ear – any three functions.
6. Thermoregulation centers, heat gain mechanisms and prevention of heat loss.
7. Cushing's syndrome – cause and features.
8. spermatogenesis – Definition and stages.

Q P Code: 113002 **Section B: Biochemistry** **Max Marks: 35**

Essay:

1. Carnithine transport system (3), four steps in beta oxidation (4), energetics of beta oxidation of palmitic acid (3).

Short Notes:

2. Steps in urea cycle (3), hyper ammonemia (2).
3. Normal ranges (FBS :70-100 mg/dl, RBS :<140 mg/dl, PPBS: 120-140 mg/dl) (2), Action of insulin in hyperglycemic condition. (3)

Answer Briefly:

4 Formation and functions of any three compounds (heme, glutathione, bile acids, purines, creatine, collagen) (3)

5. Preparation of patient, procedure and graphical representation of normal, decreased and increased glucose tolerance curve. (3)
6. Ketonemia and ketonuria in fasting and diabetes mellitus condition. (3)
7. Causes and clinical features of any three disorders (PKU, Tyrosinemia, Alkaptonuria, albinism, hartnup's disease) (3)
8. Definition, reaction of transaminases, significance of transamination reaction. (3)

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(5x3=15)

ST. GREGORIOS DENTAL COLLEGE, CHELAD

II Internal Examination - February 2020

Time: 3 hours **Total marks: 70 marks**

General Human Physiology and Biochemistry

- Draw diagrams wherever necessary

Section A - Physiology

Structured Essay

1. Describe the phases of gastric secretion and its regulation. List the composition and functions of gastric juice .CO2 &CO3, K2

(5+2+3=10)

Short Notes

2. Describe the pain pathway from the left foot with the help of a neat diagram. Add a note on referred pain. CO3, K3
3. Define GFR with normal value. Explain the factors affecting GFR. CO1, K2

(2x5=10)

Brief Notes

4. Mention the causes and symptoms of acromegaly. CO3, K3
5. Actions of posterior pituitary hormones. CO2, K3
6. Functions of thalamus.CO1, K2
7. JGA.CO1, K2
8. Grave's disease.CO3, K2

(5x3=15)

Section B - Biochemistry

Structured Essay

1. Trace the pathway of gluconeogenesis starting from alanine. Mention the key enzymes and how they are regulated. CO1&CO3, K2 **(6+2+2=10)**

Short Notes

2. Enumerate the steps of beta oxidation of fatty acid. CO1, K2
3. Explain the causes and differential diagnosis of jaundice.CO3, K4

(2x5=10)

Brief Notes

4. ELISA. CO1, K2
5. Atherosclerosis. CO2, K2
6. Diabetic ketoacidosis. CO3, K2
7. Formation of bilirubin. CO2, K2
8. Complexes of electron transport chain.CO2. K2

(5x3=15)

ST. GREGORIOS DENTAL COLLEGE, CHELAD
II Internal Examination Answer Key - February 2020

Time: 3 hours **Total marks: 70 marks**

General Human Physiology and Biochemistry

- Draw diagrams wherever necessary

Section A - Physiology

Structured Essay

1. Oral, Pharyngeal and esophageal stage. Composition and functions of gastric juice .

(5+2+3=10)

Short Notes

2. Lateral spinothalamic tract- origin course and termination. Referred pain with examples.

3. Definition, normal value and factors affecting GFR.

(2x5=10)

Brief Notes

4. Overproduction of GH in adults, Symptoms.
5. Actions of ADH and Oxytocin.
6. Any three functions of thalamus.
7. JGA – Diagram and explanation.
8. Hyperthyroidism, symptoms

(5x3=15)

Section B - Biochemistry

Structured Essay

1. Trace the pathway -key enzymes- ALT, Pyruvate carboxylase, PEPCK, Fructose-1,6-bisphosphatase, Glucose-6-phosphatase.**(6+2+2=10)**

Short Notes

2. Steps of beta oxidation of fatty acid.
3. Causes – LFTs – Total and direct bilirubin, ALT,AST,ALP,GGT

(2x5=10)

Brief Notes

4. Laboratory technique – purpose.
5. Atherosclerosis- causes and risk factors.
6. Diabetic ketoacidosis- causes and effects.
7. Steps of the formation of bilirubin.
8. Complexes I,II,III,IV and ATP Synthase Complex V

ST. GREGORIOS DENTAL COLLEGE, CHELAD

Reg. No.: .....

First Year BDS Degree Regular I Internal Examinations November 2019
General Human Physiology and Biochemistry
(2016 Scheme)

Time: 3 hrs **Max marks: 70**

- **Answer all questions to the point neatly and legibly • Do not leave any blank pages between answers • Indicate the question number correctly for the answer in the margin space**
- **Answer all parts of a single question together • Leave sufficient space between answers**
- **Draw Diagrams wherever necessary**
- **Write section A and section B in separate answer books (32 pages). Do not mix up questions from section A and section B**

Q P Code: 112002 **Section A: Physiology** **Max Marks: 35**

Essay: **(2+5+3=10)**1. Define cardiac cycle with normal timings. Describe in detail about mechanical events and its correlation with arterial and ventricular pressure changes, volume Changes and heart sounds. CO3, K2

Short Notes: **(2x5=10)**

2. Erythropoiesis and mention factors influencing it. CO1, K2
3. Explain the Intrinsic and Extrinsic pathways of coagulation. CO2, K2

Answer Briefly: **(5x3=15)**

4. Mastication. CO1, K2
5. Pharyngeal stage of deglutition. CO2, K3
6. Pernicious anemia. CO1, K2
7. Typical electrocardiogram or Limb lead II record. CO1, K3
8. Cell mediated immunity. CO1, K3

Q P Code: 113002 **Section B: Biochemistry** **Max Marks: 35**

Essay: **(2+3+4+1=10)**

1. Define denaturation of proteins. What are the factors that affect denaturation? Describe the features of denatured product. Give one example. CO2, K2

Short Notes: **(2x5=10)**

2. Essential fatty acids and its functions. CO1, K2
3. Mention the composition of glycosaminoglycans and its functions with examples. CO1, K2

Answer Briefly: **(5x3=15)**

4 Glutathione and its significance. CO3, K3
5. Lipoproteins and its functions. CO1, K2
6. What are epimers? Mention two examples. CO1, K2
7. Label secondary structure of proteins. CO1, K2
8. Name three phospholipids with its composition and functions. CO1, K2

ST. GREGORIOS DENTAL COLLEGE, CHELAD

Reg. No.: .....

First Year BDS Degree Regular I Internal Examinations, Answer key November 2019
General Human Physiology and Biochemistry
(2016 Scheme)

Time: 3 hrs **Max marks: 70**

• Answer all questions to the point neatly and legibly • Do not leave any blank pages between answers • Indicate the question number correctly for the answer in the margin space
• Answer all parts of a single question together • Leave sufficient space between answers
• Draw Diagrams wherever necessary
• Write section A and section B in separate answer books (32 pages). Do not mix up questions from section A and section B

Q P Code: 112002 **Section A: Physiology** **Max Marks: 35**

Essay: **(2+5+3=10**

)1. Definition, normal timings, phases, graphical representation of pressure and volume changes – correlate with heart sounds.

Short Notes: **(2x5=10)**

2. Definition, stages, factors affecting it.
3. Flow chart of intrinsic and extrinsic pathways, clotting factors, explanations, clot retraction.

Answer Briefly: **(5x3=15)**

4. Mastication – Brief explanation.
5. Movements, diagram.
6. Cause, symptoms.
7. Diagram, explanations.
8. Role of T cells in developing immunity.

Q P Code: 113002 **Section B: Biochemistry** **Max Marks: 35**

Essay: **(2+3+4+1=10)**

1. Describe the structural alteration. (2), agents causing denaturation (3), Changes in the structure and functions of products (4), Any one example of denaturation process (1).

Short Notes: **(2x5=10)**

2. Linoleic and Linolenic acid (2), explain any three functions (3).
3. Aminosugar and uronic acid (2), example and functions (3).

Answer Briefly: **(5x3=15)**

4 components of glutathione (1), functions (2).
5. Lipids and protein parts present in lipoproteins (1.5), functions of four classes of lipoproteins (1.5).
6. Definition (1), two examples (2).
7. Draw and explain α helix (1.5) and β- pleated sheet structure (1.5).
8. Any three phospholipids (3).