

Rajiv Gandhi University of Health Sciences, Karnataka

I B.D.S Degree Examination - 26 MAR 2021

Time: Three Hours

Max. Marks: 35

BIOCHEMISTRY, NUTRITION & DIETICS (RS3)

Your answers should be specific to the questions asked.

Draw neat labeled diagrams wherever necessary

LONG ESSAYS 1X10=10 Marks

Q.1 Describe the reactions of Krebs's citric acid cycle. Add a note on anaplerotic reactions.

SHORT ESSAYS 3X5=15 Marks

Q.2 Urea cycle.

Q.3 Renal function tests.

Q.4 Functions and deficiency of vitamin D.

SHORT ANSWERS 2X5=10 Marks

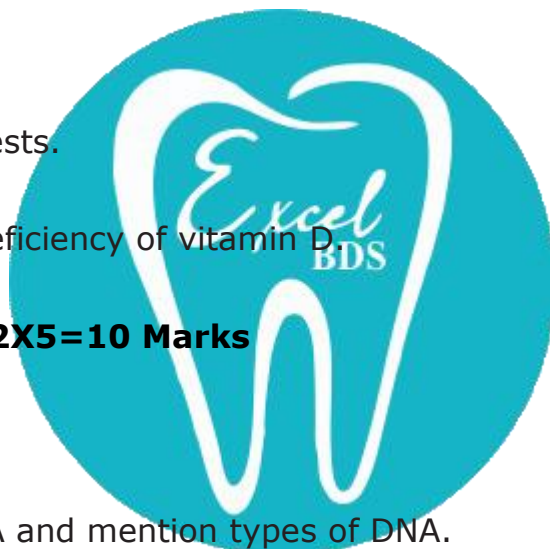
Q.5 Buffers.

Q.6 Structure of DNA and mention types of DNA.

Q.7 Name two Plasma proteins and give their functions.

Q.8 Starch.

Q.9 Essential amino acids.



Rajiv Gandhi University of Health Sciences, Karnataka

I B.D.S Degree Examination - 21 NOV 2020

Time: Three Hours

Max. Marks: 35

BIOCHEMISTRY, NUTRITION & DIETICS (RS3)

Your answers should be specific to the questions asked.

Draw neat labeled diagrams wherever necessary

LONG ESSAYS 1X10=10 Marks

Q.1. Describe Citric acid cycle (TCA cycle). Add a note on its energetics.

SHORT ESSAYS 3X5=15 Marks

Q.2. Biochemical functions and deficiency manifestations of Vitamin C

Q.3. Renal regulation of acid base balance.

Q.4. Biologically important compounds formed from Phenyl alanine and tyrosine.

SHORT ANSWERS 2X5=10 Marks

Q.5. Fluorosis.

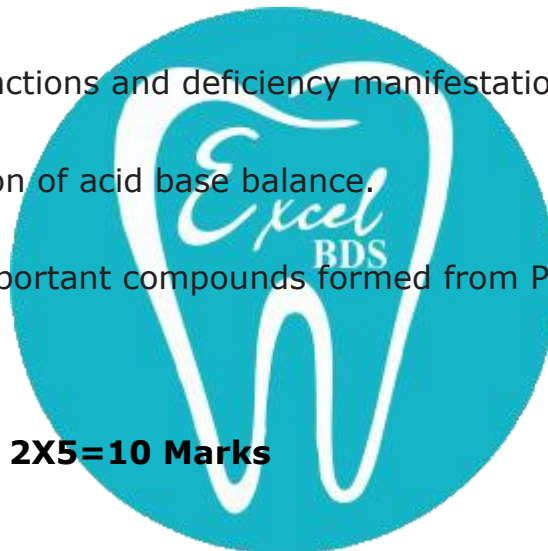
Q.6. Dietary fibers.

Q.7. Essential fatty acids.

Q.8. mRNA.

Q.9. Mention the normal serum levels of:

- a) Phosphorus.
- b) Alkaline phosphatase.



Rajiv Gandhi University of Health Sciences, Karnataka

I B.D.S Degree Examination – Dec 2019

Time: Three Hours

Max. Marks: 35 Marks

BIOCHEMISTRY, NUTRITION & DIETICS

Q.P. CODE: 1180

Your answers should be specific to the questions asked

Draw neat, labeled diagrams wherever necessary

LONG ESSAYS

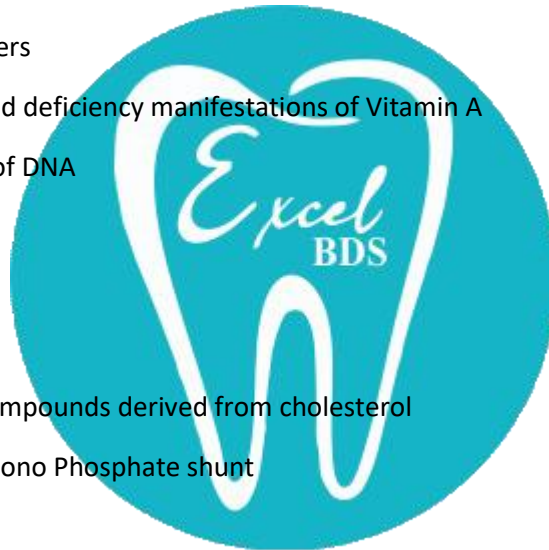
- Mention the normal pH of blood. Discuss acid base balance. Add a note on metabolic acidosis

SHORT ESSAYS

- Urea cycle and its disorders
- Biochemical functions and deficiency manifestations of Vitamin A
- Structure and functions of DNA

SHORT ANSWERS

- Biologically important compounds derived from cholesterol
- Significance of Hexose Mono Phosphate shunt
- Van Den Bergh test
- Balanced diet
- Biochemical functions of iodine



Rajiv Gandhi University of Health Sciences, Karnataka

I B.D.S Degree Examination – June 2019

Time: Three Hours

Max. Marks: 35 Marks

BIOCHEMISTRY, NUTRITION & DIETICS

Q.P. CODE: 1180

Your answers should be specific to the questions asked

Draw neat, labeled diagrams wherever necessary

***LONG ESSAYS ***

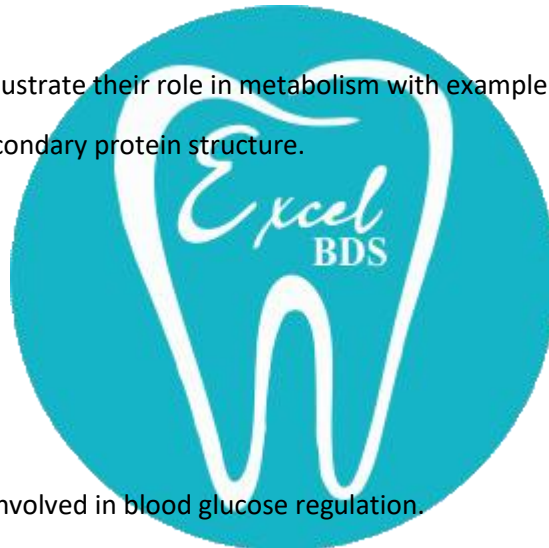
- Describe beta oxidation of saturated fatty acids (Palmitic acid). Write a note on energetic of palmitic acid.

SHORT ESSAYS

- What are co enzymes? Illustrate their role in metabolism with example.
- Describe primary and secondary protein structure.
- Wald's visual cycle

SHORT ANSWERS

- Kwashiorkor
- Mention the hormones involved in blood glucose regulation.
- Essential fatty acid
- Mention four essential amino acids.
- Dietary fibers. Mention two examples.



Rajiv Gandhi University of Health Sciences, Karnataka

I B.D.S Degree Examination – Dec 2018

Time: Three Hours

Max. Marks: 35 Marks

BIOCHEMISTRY, NUTRITION & DIETICS

Q.P. CODE: 1180

Your answers should be specific to the questions asked

Draw neat, labeled diagrams wherever necessary

LONG ESSAYS

- Name the Ketone Bodies. Discuss Ketogenesis and Ketolysis. Add a note on Ketosis.

SHORT ESSAYS

- Hormonal regulation of blood glucose
- Competitive inhibition with examples
- Biochemical functions of Pyridoxine.



SHORT ANSWERS

- tRNA.
- Phenyl Ketonuria.
- Mention four biochemical function of calcium.
- Creatinine clearance test.
- Nitrogen balance.

Rajiv Gandhi University of Health Sciences, Karnataka

I B.D.S Degree Examination – July 2018

Time: Three Hours

Max. Marks: 35 Marks

BIOCHEMISTRY, NUTRITION & DIETICS

Q.P. CODE: 1180

Your answers should be specific to the questions asked

Draw neat, labeled diagrams wherever necessary

LONG ESSAYS

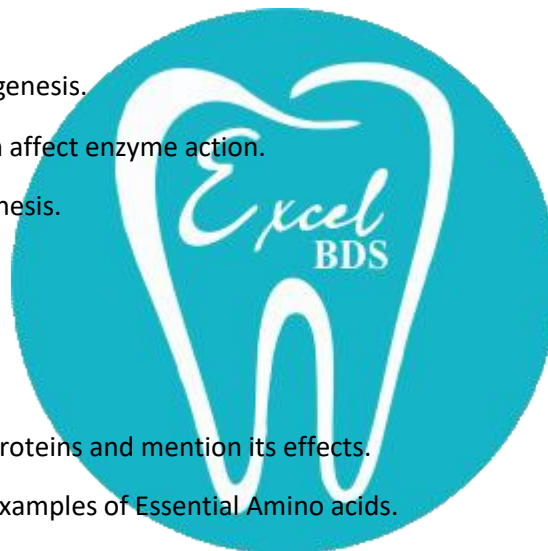
- Describe the sources, biochemical functions, required daily allowance and deficiency manifestations of Vitamin D.

SHORT ESSAYS

- Write the steps of Glycogenesis.
- Explain the factors which affect enzyme action.
- Give the steps of Ketogenesis.

SHORT ANSWERS

- Define denaturation of proteins and mention its effects.
- Give the definition and examples of Essential Amino acids.
- Fluorosis
- What are Antioxidants and give examples.
- Name the deficiency diseases of Ascorbic acid and Riboflavin.



Rajiv Gandhi University of Health Sciences, Karnataka

I B.D.S Degree Examination – Dec 2017

Time: Three Hours

Max. Marks: 35 Marks

BIOCHEMISTRY, NUTRITION & DIETICS

Q.P. CODE: 1180

Your answers should be specific to the questions asked

Draw neat, labeled diagrams wherever necessary

LONG ESSAYS

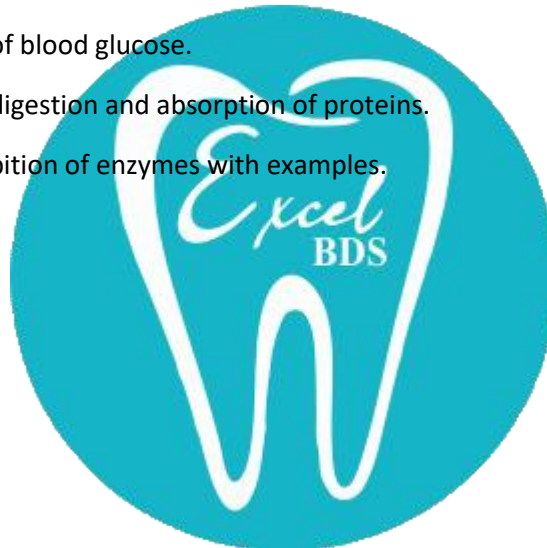
- Describe in detail about beta oxidation of fatty acids. Add a note on its energetic.

SHORT ESSAYS

- Describe the regulation of blood glucose.
- Describe the process of digestion and absorption of proteins.
- Explain competitive inhibition of enzymes with examples.

SHORT ANSWERS

- Specific dynamic action
- Conjugated proteins
- Fluorosis
- Reducing sugars
- Creatinine clearance test.



Rajiv Gandhi University of Health Sciences, Karnataka

I B.D.S Degree Examination – Aug 2017

Time: Three Hours

Max. Marks: 35 Marks

BIOCHEMISTRY, NUTRITION & DIETICS

Q.P. CODE: 1180

Your answers should be specific to the questions asked

Draw neat, labeled diagrams wherever necessary

LONG ESSAYS

- Describe the steps of citric acid cycle with its energetics.

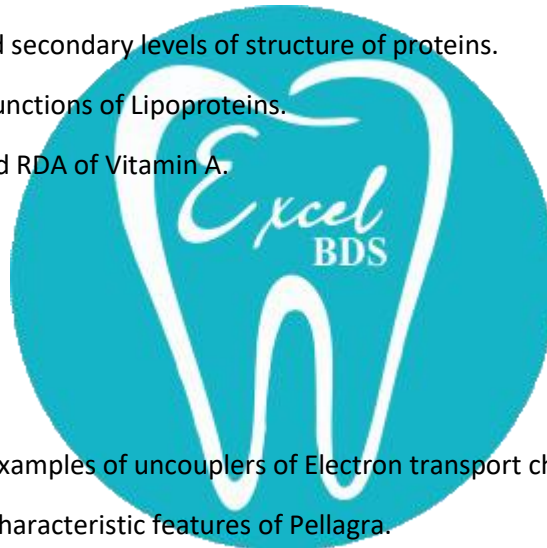
SHORT ESSAYS

- Describe the primary and secondary levels of structure of proteins.
- Mention the types and functions of Lipoproteins.

Give sources, functions and RDA of Vitamin A.

SHORT ANSWERS

- Blood buffers.
- Give the definition and examples of uncouplers of Electron transport chain.
- Mention the cause and characteristic features of Pellagra.
- Name the enzyme defect in following conditions
 - a. Phenyl Ketonuria (PKU)
 - b. Albinism
- Define Basal Metabolic Rate and write the factors that affect BMR.



Rajiv Gandhi University of Health Sciences, Karnataka

I B.D.S Degree Examination – Dec 2016

Time: Three Hours

Max. Marks: 35 Marks

BIOCHEMISTRY, NUTRITION & DIETICS

Q.P. CODE: 1180

Your answers should be specific to the questions asked

Draw neat, labeled diagrams wherever necessary

LONG ESSAYS

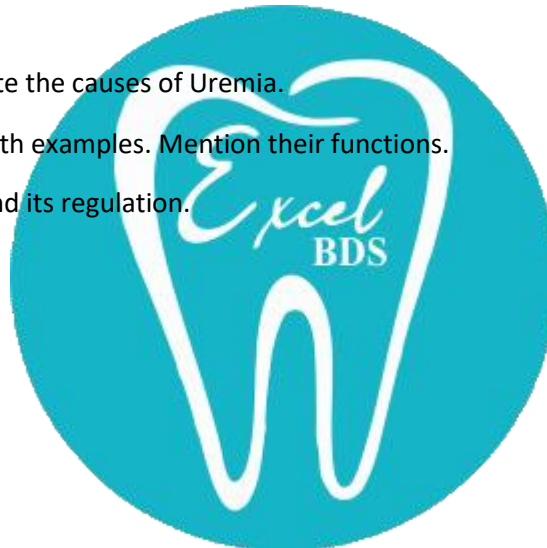
- Describe in detail the sources, absorption, functions and factors regulating blood calcium level. Discuss deficiency manifestation of calcium.

SHORT ESSAYS

- Describe Urea cycle. Write the causes of Uremia.
- Classify phospholipids with examples. Mention their functions.
- Describe Glycogenesis and its regulation.

SHORT ANSWERS

- Pellagra.
- Alkaptonuria.
- Semi essential amino acids.
- Provitamins.
- BMR.



Rajiv Gandhi University of Health Sciences, Karnataka

I B.D.S Degree Examination - JUNE 2016

Time: Three Hours

Max. Marks: 35 Marks

BIOCHEMISTRY, NUTRITION & DIETICS

Q.P. CODE: 1180

Your answers should be specific to the questions asked

Draw neat, labeled diagrams wherever necessary

LONG ESSAYS

- Describe the sources, RDA and biochemical functions of Calcium. Add a note on disorders of calcium metabolism.

SHORT ESSAYS

- Enumerate the reactions of Urea Cycle. Add a note on Energetics.
- What is Basal Metabolic Rate. What are the factors affecting BMR.
- Describe the functions of Thiamine.

SHORT ANSWERS

- Write a note on Rickets.
- Scurvy.
- Essential amino Acids.
- Blood buffers.
- What are Metallo enzymes.



Rajiv Gandhi University of Health Sciences, Karnataka

I B.D.S Degree Examination - JULY 2015

Time: Three Hours

Max. Marks: 35 Marks

BIOCHEMISTRY, NUTRITION & DIETICS

Q.P. CODE: 1180

Your answers should be specific to the questions asked

Draw neat, labeled diagrams wherever necessary

LONG ESSAYS

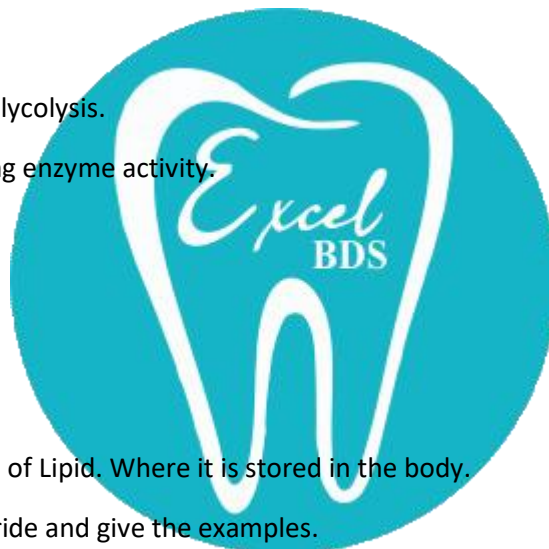
- Write the steps involved in Urea cycle. Add a note on its regulation and disorders.

SHORT ESSAYS

- Functions of Vitamin C
- Write the reactions for Glycolysis.
- Explain factors influencing enzyme activity.

SHORT ANSWERS

- Essential Amino Acids.
- What is the storage form of Lipid. Where it is stored in the body.
- Define Homopolysaccharide and give the examples.
- What is Basal Metabolic Rate. Mention any two factors affecting it.
- Define pH. Mention the normal range for Blood pH.



Rajiv Gandhi University of Health Sciences, Karnataka

I B.D.S Degree Examination - December- 2015

Time: Three Hours

Max. Marks: 35 Marks

BIOCHEMISTRY, NUTRITION & DIETICS

Q.P. CODE: 1180

Your answers should be specific to the questions asked

Draw neat, labeled diagrams wherever necessary

LONG ESSAYS

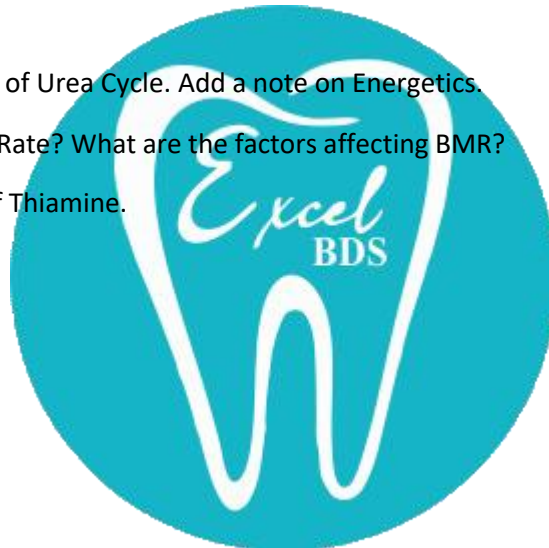
- Describe the sources, RDA and biochemical functions of Calcium. Add a note on disorders of Calcium metabolism.

SHORT ESSAYS

- Enumerate the reactions of Urea Cycle. Add a note on Energetics.
- What is Basal Metabolic Rate? What are the factors affecting BMR?
- Describe the functions of Thiamine.

SHORT ANSWERS

- Write a note on Rickets
- Scurvy
- Essential Amino Acids
- Blood buffers
- What are Metallo-enzymes?



Rajiv Gandhi University of Health Sciences, Karnataka

I B.D.S Degree Examination - December 2014

Time: Three Hours

Max. Marks: 35 Marks

BIOCHEMISTRY, NUTRITION & DIETICS

Q.P. CODE: 1180

Your answers should be specific to the questions asked

Draw neat, labeled diagrams wherever necessary

LONG ESSAYS

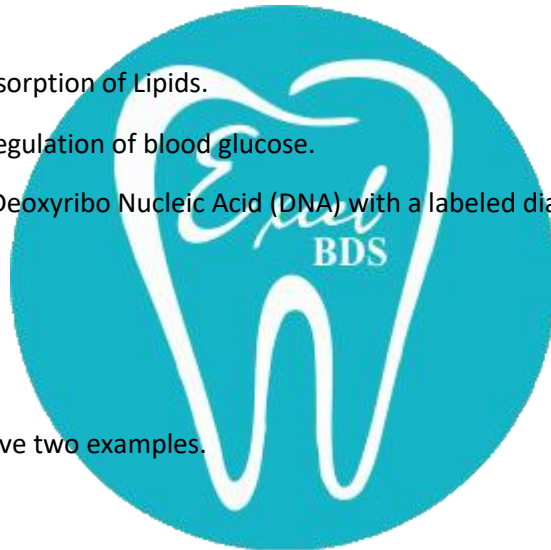
- Describe the chemistry, sources, requirement, metabolic functions and deficiency manifestations of Vitamin A.

SHORT ESSAYS

- Explain Digestion and absorption of Lipids.
- Describe the hormonal regulation of blood glucose.
- Explain the structure of Deoxyribo Nucleic Acid (DNA) with a labeled diagram.

SHORT ANSWERS

- What are Isoenzymes. Give two examples.
 - Essential Fatty Acids
 - Glycogen
 - Lactose Intolerance
- a) Name a vitamin, which act as Antioxidant.
- b) Name a vitamin, which act as steroid Hormone.



Rajiv Gandhi University of Health Sciences, Karnataka

I B.D.S Degree Examination - June 2014

Time: Three Hours

Max. Marks: 35 Marks

BIOCHEMISTRY, NUTRITION & DIETICS

Q.P. CODE: 1180

Your answers should be specific to the questions asked

Draw neat, labeled diagrams wherever necessary

LONG ESSAY

1. What is the significance of Glycogen? Discuss in detail Glycogen synthesis.

SHORT ESSAYS

3 x 5 = 15 Ma

2. Structure and functions of Immunoglobulins
3. Coenzyme forms and functions of Vitamin B₁₂
4. Define and classify Enzymes with examples.

SHORT ANSWERS

5 x 2 = 10 Ma

5. What is Fatty Liver? Write any two causes for Fatty Liver.
6. Define Essential Amino Acids and name them.
7. Kwashiorkor
8. Write any four differences between Deoxyribo Nucleic Acid (DNA) and Ribo Nucleic Acid (RNA).
9. Define (a) Isoelectric pH, (b) Denaturation.



Rajiv Gandhi University of Health Sciences, Karnataka

I B.D.S Degree Examination - Dec 2013

Time: Three Hours

Max. Marks: 35 Marks

BIOCHEMISTRY, NUTRITION & DIETICS

Q.P. CODE: 1180

Your answers should be specific to the questions asked

Draw neat, labeled diagrams wherever necessary

LONG ESSAY

• Describe the following aspects of enzymes:

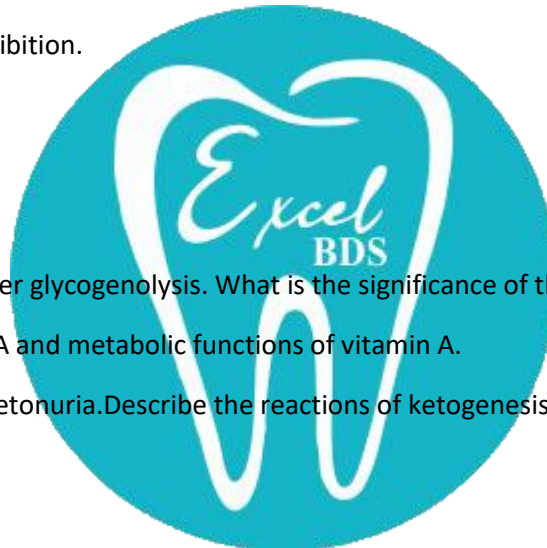
- a) Specificity of enzymes.
- b) Four factors influencing enzyme activity.
- c) Competitive enzyme inhibition.

SHORT ESSAY

- Write the reactions of liver glycogenolysis. What is the significance of this pathway.
- Describe the sources, RDA and metabolic functions of vitamin A.
- Explain ketonemia and ketonuria. Describe the reactions of ketogenesis.

SHORT ANSWERS

- Write a note on Fluorosis.
- Name essential fatty acids. Write two functions.
- Name two specialized products formed from tyrosine and its function in the body.
- Give the range for normal blood pH. Name buffers utilized in maintaining acid base balance in the body.
- Briefly write on urea clearance test.



Rajiv Gandhi University of Health Sciences, Karnataka

I B.D.S Degree Examination - Jun 2013

Time: Three Hours

Max. Marks: 35 Marks

BIOCHEMISTRY, NUTRITION & DIETICS

Q.P. CODE: 1180

Your answers should be specific to the questions asked

Draw neat, labeled diagrams wherever necessary

LONG ESSAY

• Describe the following aspects of citric acid cycle:

- a) Reactions
- b) Energetics
- c) Regulation
- d) Functions

SHORT ESSAY

- Classify lipids giving an example for each class.
- Write coenzyme form,
one function and one deficiency disorder of the following vitamins:
(a) Thiamine (b) Niacin (c) Ascorbic acid (d) Folic acid (e) Riboflavin
- Describe digestion and absorption of proteins in GIT.



SHORT ANSWERS

- Write a note on absorption of calcium from GIT.
- Define transamination. Give an example.
- What is BMR. Write two factors affecting BMR.
- Give the range for normal blood pH. List out two conditions leading to respiratory acidosis.
- What is ketoacidosis. Name two conditions leading to it.

Rajiv Gandhi University of Health Sciences, Karnataka

I B.D.S Degree Examination – June 2012

Time: Three Hours

Max. Marks: 35 Marks

BIOCHEMISTRY, NUTRITION & DIETICS

Q.P. CODE: 1180

Your answers should be specific to the questions asked

Draw neat, labeled diagrams wherever necessary

LONG ESSAY

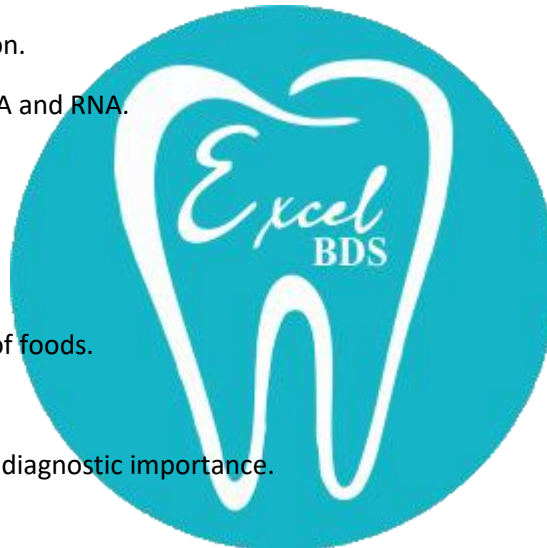
Write an essay on classification of lipids with suitable examples.

SHORT ESSAY

- Functions of plasma proteins.
- Oxidative phosphorylation.
- Differences between DNA and RNA.

SHORT ANSWERS

- Specific dynamic action of foods.
- Provitamins.
- Transaminases and their diagnostic importance.
- Metabolic acidosis.
- Enzyme defect in
(a) von gierke's disease.
(b) Phenylketonuria.



Rajiv Gandhi University of Health Sciences, Karnataka

I B.D.S Degree Examination – Dec 2012

Time: Three Hours

Max. Marks: 35 Marks

BIOCHEMISTRY, NUTRITION & DIETICS

Q.P. CODE: 1180

Your answers should be specific to the questions asked

Draw neat, labeled diagrams wherever necessary

LONG ESSAY

• Describe the following aspects of anaerobic glycolysis:

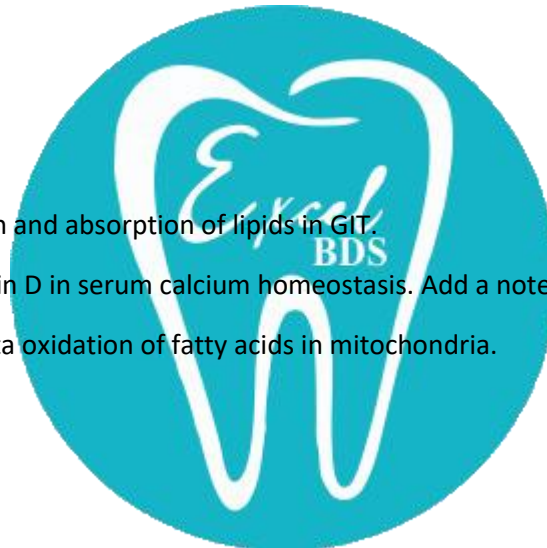
- a) Reactions
- b) Energetics
- c) Substrate level phosphorylation.

SHORT ESSAY

- Write briefly on digestion and absorption of lipids in GIT.
- Discuss the role of vitamin D in serum calcium homeostasis. Add a note on deficiency of Vitamin D.
- Describe reactions of beta oxidation of fatty acids in mitochondria.

SHORT ANSWERS

- Write two examples each for nucleosides and nucleotides.
- Give an example for competitive enzyme inhibition.
- Write a note on dietary fibers.
- Write the enzyme defect and the metabolite excreted in the urine of following disorders:
 - a) Phenylketonuria.
 - b) Alkaptonuria.
- Write the clinical significance of Alkaline phosphatase and acid phosphatase level in blood.



Rajiv Gandhi University of Health Sciences, Karnataka

I B.D.S Degree Examination – June 2011

Time: Three Hours

Max. Marks: 35 Marks

BIOCHEMISTRY, NUTRITION & DIETICS

Q.P. CODE: 1180

Your answers should be specific to the questions asked

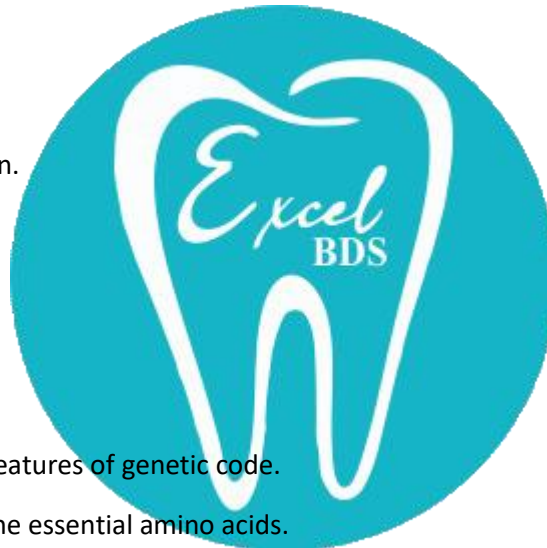
Draw neat, labeled diagrams wherever necessary

LONG ESSAY

- Classify enzymes giving suitable examples for each class. Add a note on enzyme specificity

***SHORT ESSAY ***

- Functions of Vitamin A.
- Enzymes of lipid digestion.
- Cori's cycle.



SHORT ANSWERS

- Enumerate the general features of genetic code.
- Define and mention all the essential amino acids.
- Biologically important derivatives of cholesterol.
- Define clearance and mention the normal values of creatine clearance rate.
- Alkaptonuria Defect and biochemical changes

Rajiv Gandhi University of Health Sciences, Karnataka

I B.D.S Degree Examination – Dec 2011

Time: Three Hours

Max. Marks: 35 Marks

BIOCHEMISTRY, NUTRITION & DIETICS

Q.P. CODE: 1180

Your answers should be specific to the questions asked

Draw neat, labeled diagrams wherever necessary

LONG ESSAY

- Write an essay on Beta - Oxidation of fatty acids. Add a note on its bioenergetics

***SHORT ESSAY ***

- Mucopolysaccharides
- Functions of vitamin C
- Regulation of blood calcium



SHORT ANSWERS

- Denaturation
- Creatinine clearance test
- Coenzyme nucleotides & vitamins
- Oxidative deamination
- Protein calorie malnutrition

Rajiv Gandhi University of Health Sciences, Karnataka

I B.D.S Degree Examination – June 2010

Time: Three Hours

Max. Marks: 35 Marks

BIOCHEMISTRY, NUTRITION & DIETICS

Q.P. CODE: 1180

Your answers should be specific to the questions asked

Draw neat, labeled diagrams wherever necessary

LONG ESSAY

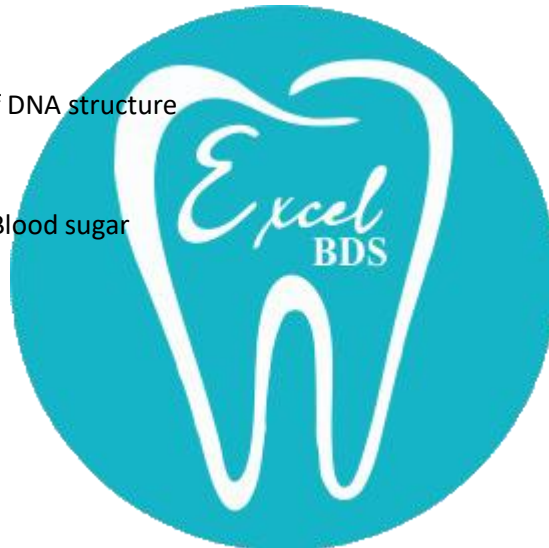
- Describe the pathway of Krebs citric acid cycle & add a note on its energetics & significance

SHORT ESSAY

- Watson & Crick model of DNA structure
- Functions of vitamin A
- Hormonal regulation of Blood sugar

***SHORT ANSWERS ***

- Essential amino acids
- Vandenbergh test
- Four functions of cholesterol
- Transamination reaction
- Calorific value of carbohydrates, proteins and lipids



Rajiv Gandhi University of Health Sciences, Karnataka

I B.D.S Degree Examination – Dec 2010

Time: Three Hours

Max. Marks: 35 Marks

BIOCHEMISTRY, NUTRITION & DIETICS

Q.P. CODE: 1180

Your answers should be specific to the questions asked

Draw neat, labeled diagrams wherever necessary

LONG ESSAY

- Write an essay on glycolysis. Add a note on the bio energetics of the pathway

SHORT ESSAY

- Types of RNA
- Functions of vitamin C
- Iso enzymes

SHORT ANSWERS

- Essential fatty acids
- Lipotropic factors
- Basal metabolic rate
- Blood buffers
- Fluorosis



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