

DR. NTR UNIVERSITY OF HEALTH SCIENCES::AP::VIJAYAWADA-520 008  
B.D.S. DEGREE EXAMINATION – JANUARY, 2017  
FIRST BDS EXAMINATION

**GENERAL HUMAN PHYSIOLOGY & BIOCHEMISTRY**  
**(NR & OR)**

Time : 3 Hours

Max. Marks : 70

Note: Answer Part A & B in separate answer books. Questions in Part 'A' should not be answered in Part 'B' and vice versa. Otherwise they will not be valued.

Answer all questions.

Draw neat labeled diagrams wherever necessary.

**PART-A-PHYSIOLOGY (35 MARKS)**

- 1) Explain stages of Erythropoiesis. Add a note on factors required for erythropoiesis. 5+4=9

**WRITE SHORT NOTES ON:**

4x4=16

- 2) Progesterone
- 3) Properties of smooth muscle
- 4) Functions of bile
- 5) Factors influencing glomerular filtration rate

**WRITE BRIEFLY ON:**

5x2=10

- 6) Myopia
- 7) Forms of oxygen transport
- 8) Functions of CSF
- 9) Insulin
- 10) Components of a reflex arc

**PART-B - BIOCHEMISTRY(35 MARKS)**

- 11) Outline the Glycolytic pathway for the oxidation of glucose in the body. What its energetics? 9

**WRITE SHORT NOTES ON:**

4x4=16

- 12) Biochemical functions of Vit. A
- 13) Competitive inhibition
- 14) Beta oxidation of fatty acids
- 15) Characteristics of genetic code

**WRITE BRIEFLY ON:**

5x2=10

- 16) Significance of HMP pathway
- 17) Essential Amino acids
- 18) Biochemically important products from cholesterol
- 19) Factors regulating plasma calcium
- 20) Basal metabolic rate and its importance

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**DR NTR UNIVERSITY OF HEALTH SCIENCES :: VIJAYAWADA :: AP**  
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**(NR & OR)**

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**Answer all questions.**

**Draw neat labeled diagrams wherever necessary.**

**PART-A-PHYSIOLOGY (35 MARKS)**

- 21) Give the composition of Saliva and explain the functions of Saliva 4+5=9

**WRITE SHORT NOTES ON:**

4x4=16

- 22) "Sino - Aortic reflex"  
 23) Composition and functions of "Gastric Juice"  
 24) Plasma proteins  
 25) "Oxygen- Hemoglobin dissociation Curve"

**WRITE BRIEFLY ON:**

5x2=10

- 26) Dwarfism  
 27) Puberty  
 28) Rhesus Factor  
 29) Hypermetropia  
 30) Stages of spermatogenesis

**PART-B - BIOCHEMISTRY(35 MARKS)**

- 31) How do you classify enzymes? What is the effect of pH, temperature and substrate concentration on enzyme activity? 2+1+2+4=9

**WRITE SHORT NOTES ON:**

4x4=16

- 32) Plasma Lipoproteins  
 33) Metabolic changes in Diabetes Mellitus  
 34) Explain the biochemical role and deficiency manifestations of Vitamin C

- 35) Glycolysis

**WRITE BRIEFLY ON:**

5x2=10

- 36) Essential fatty acids  
 37) Gout  
 38) Transamination  
 39) Factors affecting Calcium absorption  
 40) What are the normal levels of the following?  
     a) Serum Potassium    b) Serum cholesterol

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**B.D.S. DEGREE EXAMINATION – JANUARY, 2015**  
**FIRST BDS EXAMINATION**  
**GENERAL HUMAN PHYSIOLOGY & BIOCHEMISTRY**  
**(NR & OR)**

Time : 3 Hours

Max. Marks : 70

**Note:** Answer Part A & B in separate answer books. Questions in Part 'A' should not be answered in Part 'B' and vice versa. Otherwise they will not be valued.

Answer all questions.

Draw neat labeled diagrams wherever necessary.

**PART-A-PHYSIOLOGY (35 MARKS)**

- 41) Describe the nervous regulation of respiration. Add a note on Herring – Breuer's reflex. 9

**WRITE SHORT NOTES ON:**

4x4=16

- 42) Physiological changes in pregnancy

- 43) Visual pathway

- 44) Functions of lymph

- 45) Functions of blood

**WRITE BRIEFLY ON:**

5x2=10

- 46) Taste buds

- 47) Neuron

- 48) 3 hormones regulating plasma calcium

- 49) Functions of Saliva

- 50) Peristalsis

**PART-B - BIOCHEMISTRY(35 MARKS)**

- 51) Outline the pathway of aerobic glycolysis. Add a note on its energetics. 9

**WRITE SHORT NOTES ON:**

4x4=16

- 52) Name the ketone bodies. How are they formed?

- 53) Functions of Vitamin A

- 54) Name the types of ribonucleic acid (RNA), mention their important structural features and functions.

- 55) Explain the diagnostic importance of plasma enzymes with any three examples.

**WRITE BRIEFLY ON:**

5x2=10

- 56) Functions of albumin

- 57) Mention the normal blood levels of : Calcium, cholesterol, urea and creatinine

- 58) Function and deficiency of iodine

- 59) Essential fatty acids

- 60) Name any two disaccharides and give their composition

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DR. NTR UNIVERSITY OF HEALTH SCIENCES::AP::VIJAYAWADA-520 008

B.D.S. DEGREE EXAMINATION – JUNE/JULY, 2015

FIRST BDS EXAMINATION

**GENERAL HUMAN PHYSIOLOGY & BIOCHEMISTRY****(NR & OR)****Time : 3 Hours****Max. Marks : 70**

Note: Answer Part A & B in separate answer books. Questions in Part 'A' should not be answered in Part 'B' and vice versa. Otherwise they will not be valued.

Answer all questions.

Draw neat labeled diagrams wherever necessary.

***PART-A-PHYSIOLOGY (35 MARKS)***

- 61) What is Blood? What are the functions of Blood? 2+3+4=9  
Outline stages of Erythropoiesis.

**WRITE SHORT NOTES ON:** 4x4=16

- 62) Chemical Regulation of Respiration  
63) Actions of Cortisol  
64) E.C.G. and its waves and causes  
65) List the different types of Hypoxia. Explain any one of them.

**WRITE BRIEFLY ON:** 5x2=10

- 66) Packed Cell Volume  
67) Two family planning methods  
68) Name the phases of Gastric Secretion  
69) Define cardiac output and Blood Pressure  
70) Two functions of Liver

***PART-B - BIOCHEMISTRY(35 MARKS)***

- 71) How provitamin D is converted to its active form? Give the 3+3+3=9  
biochemical role and deficiency manifestations of Vitamin D.

**WRITE SHORT NOTES ON:** 4x4=16

- 72) Write the components of electron transport chain. Indicate the sites of ATP formation during electron transport.  
73) Enumerate the functions of Albumin. Mention the causes of hypoalbuminemia.  
74) Name the derivatives of cholesterol. Give the biomedical importance of three derivatives of cholesterol.  
75) What are isoenzymes? Give two examples and mention their clinical significance.

**WRITE BRIEFLY ON:** 5x2=10

- 76) What are essential amino acids? Name them  
77) Heparin  
78) What is renal glycosuria?  
79) Name two competitive inhibitors of enzyme  
80) Mention the conditions arising due to the deficiency and excess of Fluoride in the body

**B.D.S. DEGREE EXAMINATION – JUNE, 2014**  
**FIRST BDS EXAMINATION**  
**GENERAL HUMAN PHYSIOLOGY & BIOCHEMISTRY**  
**(NR & OR)**

Time : 3 Hours

Max. Marks : 70

**Note: Answer Part A & B in separate answer books. Questions in Part 'A' should not be answered in Part 'B' and vice versa. Otherwise they will not be valued.**

**Answer all questions.**

**Draw neat labeled diagrams wherever necessary.**

**PART-A-PHYSIOLOGY (35 MARKS)**

- 81) Mention the names of clotting factors in proper order. 4+5=9  
 Explain the intrinsic mechanism of blood clotting.

**WRITE SHORT NOTES ON:** 4x4=16

- 82) Chemoreceptors  
 83) Regulation of gastric juice secretion  
 84) Actions of growth hormone  
 85) Functions of hypothalamus

**WRITE BRIEFLY ON:** 5x2=10

- 86) Feto placental unit  
 87) Stretch reflex  
 88) All or None law  
 89) Taste pathway  
 90) Male contraceptive methods

**PART-B - BIOCHEMISTRY(35 MARKS)**

- 91) Enumerate the sources, daily requirement and functions of calcium. Explain the regulation of serum calcium level. 2+1+2+4=9

**WRITE SHORT NOTES ON:** 4x4=16

- 92) Digestion and absorption of Carbohydrates.  
 93) Significance of citric acid cycle  
 94) Salient features of double helical structure of DNA  
 95) Influence of any four factors on enzyme activity.

**WRITE BRIEFLY ON:** 5x2=10

- 96) Name any two glycosaminoglycans, mention their functions.  
 97) Von-Gierke's disease  
 98) Give the normal pattern of serum protein electrophoresis  
 99) Name the biologically important compounds formed from cholesterol  
 100 Salient features of genetic code.

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**B.D.S. DEGREE EXAMINATION – JANUARY, 2014**  
**FIRST BDS EXAMINATION**  
**GENERAL HUMAN PHYSIOLOGY & BIOCHEMISTRY**  
**(NR & OR)**

Time : 3 Hours

Max. Marks : 70

**Note: Answer Part A & B in separate answer books. Questions in Part 'A' should not be answered in Part 'B' and vice versa. Otherwise they will not be valued.**

**Answer all questions.**

**Draw neat labeled diagrams wherever necessary.**

**PART-A-PHYSIOLOGY (35 MARKS)**

- 101] Define blood pressure. What are the factors affecting blood pressure? Describe the regulation of blood pressure. 2+3+4=9

**WRITE SHORT NOTES ON:**

4x4=16

- 102] Estrogen  
 103] Properties of Cardiac muscle  
 104] Composition and functions of saliva  
 105] Functions of kidney

**WRITE BRIEFLY ON:**

5x2=10

- 106] Functions of Rods and Cones  
 107] Mass reflex  
 108] Secretions of anterior pituitary  
 109] Composition of pancreatic juice  
 110] Deglutition

**PART-B - BIOCHEMISTRY(35 MARKS)**

- 111] Outline the steps of Glycolysis.

9

**WRITE SHORT NOTES ON:**

4x4=16

- 112] Classify enzymes  
 113] Electron transport chain  
 114] Vitamin A  
 115] Ketogenesis

**WRITE BRIEFLY ON:**

5x2=10

- 116] Basal Metabolic Rate (BMR)  
 117] Rickets  
 118] Biologically important peptides  
 119] Essential fatty acids  
 120] Normal values of blood urea and serum creatinine

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**B.D.S. DEGREE EXAMINATION – JUNE, 2013**  
**FIRST BDS EXAMINATION**  
**GENERAL HUMAN PHYSIOLOGY & BIOCHEMISTRY**  
**(NR & OR)**

Time : 3 Hours

Max. Marks : 70

**Note:** Answer Part A & B in separate answer books. Questions in Part 'A' should not be answered in Part 'B' and vice versa. Otherwise they will not be valued.

Answer all questions.

Draw neat labeled diagrams wherever necessary.

**PART-A-PHYSIOLOGY (35 MARKS)**

- 121] Explain the various phases of gastric secretion. 9  
 Describe the nervous and hormonal regulation of gastric secretion.

**WRITE SHORT NOTES ON:**

4x4=16

- 122] Testosterone  
 123] Functions of middle ear  
 124] Non-Respiratory functions of lung  
 125] Homeostasis

**WRITE BRIEFLY ON:**

5x2=10

- 126] Functions of skin  
 127] Muscle tone  
 128] Define stroke volume and cardiac output  
 129] Functions of liver  
 130] Mastication

**PART-B - BIOCHEMISTRY(35 MARKS)**

- 131] Outline the steps of urea cycle. 9  
**WRITE SHORT NOTES ON:** 4x4=16

- 132] Classify lipids  
 133] Oxidative Phosphorylation  
 134] Mucopolysaccharides  
 135] Vitamin C.

**WRITE BRIEFLY ON:**

5x2=10

- 136] Functions of Albumin  
 137] Metabolic acidosis  
 138] Transcription.  
 139] Role of fibre in the diet  
 140] Normal values of fasting blood glucose and serum cholesterol

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**417 / 401-FIRST B.D.S. DEGREE EXAMINATION – DECEMBER, 2012**

General Human Physiology & Biochemistry-(NR & OR)-Time : 3 Hours-Max. Marks : 70-Answer Part A & B in separate answer books. Questions in Part 'A' should not be answered in Part 'B' and vice versa. Otherwise they will not be valued-Answer all questions-Draw neat labeled diagrams wherever necessary.

**PART-A-PHYSIOLOGY (35 MARKS)**

1..What are the pathways of coagulation blood? Explain intrinsic pathway. Name a laboratory anti coagulant=9m

Write Short Notes On: 4 x 4=16m

2..Stages of Spermatogenesis

3..Actions of Thyroxine

4..Composition of Pancreatic Juice

5..Errors of Refraction

Write Briefly On: 5 x 2=10m

6..Types of muscles

7..Types of Neurons 8..Ovarian Hormones

9..Forms in which CO<sub>2</sub> is transported

10..Two family planning methods

**PART-B - BIOCHEMISTRY(35 MARKS)**

11..Enumerate the sources, daily requirement and deficiency manifestations of Vitamin D. Explain its functions=1+2+3+3=9m

Write Short Notes On: 4 x 4=16m

12..Define gluconeogenesis. Name the key enzymes and mention the significance of this pathway for the skeletal muscle.

13..Protein Energy Malnutrition 14..Structure and function of any two homopolysaccharides

15..Any four functions of Calcium.

Write Briefly On: 5 x 2=10m

16..Any two functions of phospholipids

17..Prostacyclin

18..What is calorific value? Mention the calorific values of carbohydrates and fats.

19..Functions of Vitamin K

20..Give the normal levels of blood cholesterol and blood urea.

**417 / 401-FIRST B.D.S. DEGREE EXAMINATION – JUNE, 2012**

**PART-A-PHYSIOLOGY (35 MARKS)**

1..Explain the stages of erythropoiesis. Add a note on factors required for erythropoiesis=9m

Write Short Notes On: 4 x 4=6m

2..Draw a labelled diagram of spirogram and give normal values of any two lung volumes and any two lung capacities.

3..Compare and contrast actions of Epinephrine and norepinephrine.

4..What is referred pain? Explain any one theory of referred pain.

5..Explain the renin-angiotensin mechanism of regulation of blood pressure.

Write Briefly On: 5 x 2=10m

6..Pavlov's pouch

7..Arterial pulse

9..Neuroglia

9..Inulin clearance

10..Cyanosis

**PART-B - BIOCHEMISTRY(35 MARKS)**

11..Outline the Reactions of Citric Acid Cycle. What are its Energetics?=9m

Write Short Notes On: 4 x 4=16m

12..Role of kidney in regulating PH of blood 13..Urea Cycle 14..Plasma Proteins and their functions

15..Glycogen Storage Disorders

Write Briefly: 5 x 2=10m. Hormones involved in the regulation of Blood Glucose 17. Essential Amino acids

18..Differences Between DNA & RNA 19..Metabolic acidosis 20..Factors Influencing Iron Absorption

**417 / 401-FIRST B.D.S. DEGREE EXAMINATION – DECEMBER,2011/JANUARY, 2012**

General human physiology & biochemistry=(nr & or)-Time : 3 Hours-Max. Marks : 70

**PART-A-PHYSIOLOGY (35 MARKS)**



1..Enumerate Respiratory centers. How the respiration is regulated by these centers?=9m

Write Short Notes On: 4 x 4=16m

2..Peristalsis. 3..Functions of hypothalamus. 4..Functions of Red blood cells. 5..Oestrogen.

Write Briefly On: 5 x 2=10m

6..Babinski's sign 7.Dwarfism 8.Presbyopia 9.Second Heart Sound 10.Glomerular filtration rate

**PART-B - BIOCHEMISTRY(35 MARKS)**

11.How do you classify enzymes? Describe the various factors affecting enzyme activity=9m

Write Short Notes On: 4 x 4=16m

12.Immunoglobulins 13.Electron Transport Chain. 14.Van den Bergh Test and its importance.

15.Glycolysis.

Write Briefly On: 5 x 2=10m

16.Essential fatty acids. 17.Gout. 18.Transamination. 19.Factors affecting Calcium absorption.

20.What is the normal range of the following?: a) Blood Glucose b) Blood Urea

**417 / 401-FIRST B.D.S. DEG. EXAM- JUNE, 2011-GEN. HUMAN PHY. & BIOCH.=(NR & OR)**

**PART-A-PHYSIOLOGY (35 MARKS)**

1..Explain Intrinsic and Extrinsic mechanism of blood Clotting=9m

Write Short Notes On: 4 X 4 =16m

2..Functions of Liver. 3..Composition and Functions of Saliva

4..Draw a labeled diagram of "Neuro-Muscular junction". 5..The Chloride-shift mechanism

Write Briefly On: 5 X 2 =10m

6..Goitre 7..Ovulation 8..Erythropoietin 9..Myopia 10.Functions of skin

**PART-B - BIOCHEMISTRY(35 MARKS)**

11.What are the sources, requirement, biochemical functions and deficiency manifestations of Vitamin D=9m

Write Short Notes On: 4 X 4=12.Competitive inhibition 13.Structure of Deoxyribonucleic acid (DNA)

14.Functions and deficiency symptoms of Vitamin C 15.Iron deficiency anaemia.

Write Briefly On: 5 X 2 =10m

16.Basal metabolic rate (BMR) 17.Blood buffer 18.Tests for urinary bile salts and bile pigments

19. Beriberi

20.What are the normal values of : (a) Sodium (b) Potassium

(c) Chloride (d) Bicarbonate in plasma

**417 / 401-FIRST B.D.S. DEGREE EXAMINATION – DECEMBER, 2010/JANUARY, 2011**

**PART-A-PHYSIOLOGY (35 MARKS)**

1..Define blood pressure. Explain the short term mechanisms of regulation of blood pressure=9m

Write Short Notes On:4 X 4 =16m

2..Explain the role of peripheral chemoreceptors in regulation of respiration.

3..Explain the stages of spermatogenesis. List the factors regulating it.

4..Referred pain. 5..Name the phases of deglutition. Explain second phase of deglutition

Write Briefly On: 5 X 2 =10m

6..Bohr's effect 7..Immunoglobulin 8..Glomerular filtration rate 9..Haemophilia

10.Sarcomere

**PART-B - BIOCHEMISTRY(35 MARKS)**

11.Describe Hexose-monophosphate shunt pathway and its biological significance=9m

Write Short Notes On: 4 X 4 =16m

12.Diagnostic importance of enzymes 14.Jaundice 15.Vitamin D deficiency disorders

Write Briefly On: 5 X 2 =10m

16.Electrophoretic pattern of plasma proteins 17.Ketosis 18.Purine salvage pathway

19.Role of kidney in regulation of blood pH 20.Replication of DNA

**417-FIRST B.D.S. DEG. EXAM – JUNE, 2010-GEN. HUMAN PHY. & BIOCHEMISTRY-(N.R.)**

**PART-A-PHYSIOLOGY (35 MARKS)**

1..Enumerate the hormones of Anterior pituitary. Describe the functions of any one of them=9m

Write Short Notes On: 4 X 4 =16m

2..Plasma proteins 3..Dead space 4..Astigmatism 5..Artificial respiration

Write Briefly On: 5 X 2=6..Functions of haemoglobin 7..Gastric juice

8..Cerebrospinal fluid 9..Glomerular filtration rate 10.Dehydration shock

#### PART-B - BIOCHEMISTRY(35 MARKS)

11.What is urea? Discuss the steps of urea synthesis and its significance=9m

Write Short Notes On: 4 X 4 =16m

12.Role of hormones in regulation of serum calcium level 13.Balanced diet

14.Synthesis of thyroid hormone 15.Synthesis and uses of glucuronic acid

Write Briefly On: 5 X 2 =10m

16.What is transmethylation? Give two examples 17.Substrate level phosphorylation

18.Give two examples of detoxification by conjugation

19.Enzyme marker in myocardial infarction 20.Difference between DNA and RNA

**417-FIRST B.D.S. DEG. EXAM – JANUARY, 2010-GEN. HUMAN PHY. & BIOCH.-(N.R.)**

#### PART-A-PHYSIOLOGY (35 MARKS)

1..Name the respiratory centers. Explain the neural regulation of respiration=9m

Write Short Notes On: 4 X 4 =16m

2.Explain the reabsorption of water in renal tubules. 3.Functions of liver

4.Define cardiac output. Explain any one method of measuring it.

5.Explain the mechanism of secretion of hydrochloric acid in the stomach.

Write Briefly On: 5 X 2 =10m

6.P C V 7.Landstiner's Law 8.Taste bud 9.Haemophilia 10.Sarcomere

#### PART-B - BIOCHEMISTRY(35 MARKS)

11.What are the biochemical basis of various types of Jaundice. How will you distinguish different types of jaundice using biochemical tests for urine and blood?=9m

Write Short Notes On: 4 X 4 =16m

12.Name the essential fatty acids and their importance. 13.Calcium homeostasis

14.Isoenzymes and their clinical significance. 15.Structures of protein

Write Briefly On: 5 X 2 =10m

16.Biological functions of Vitamin C 17.Structure of t-RNA 18.Benedicts test

19.Metabolic alkalosis 20.Ketone bodies

**401-FIRST B.D.S. DEG. EXAMINATION – JAN., 2010-HUMAN PHY. & BIOCHEMISTRY-O.R.**

#### PART-A-PHYSIOLOGY (35 MARKS)

1..Mention the names of the clotting factors in proper order. Explain the intrinsic mechanism of blood clotting

Write Short Notes On: 4 X 4 =16m

2.Give the composition of pancreatic juice 3.List the functions of middle ear. Explain any one of them

4..List the different types of Hypoxia and explain any one of them.

5..Draw a labelled diagram of stretch reflex arc and explain the function of stretch reflex arc.

Write Briefly On: 5 X 2 =10m

6.Haldane's effect 7.Bile salts 8.Saltatory conduction 9.Corpus luteum 10.Erythroblastosis Foetalis

#### PART-B - BIOCHEMISTRY(35 MARKS)

11.What are enzymes? Give an account of the effect of substrate concentration, pH and temperature on enzyme activity=9m

Write Short Notes: 4 X 4=12.Digestion and absorption of carbohydrates 13.Classification of lipids

14.Functions of Proteins in body

15.Harmones that regulate blood sugar

Write Briefly On: 5 X 2 =10m

16.Name the purine bases 17.Heparin 18.Scurvy 19.Name the buffer systems of the body

20.Maple Syrup Disease

**417-FIRST B.D.S. DEG. EXAM – JUNE, 2009-GEN. HUMAN PHY. & BIOCHEMISTRY(N.R.)**

***PART-A-PHYSIOLOGY (35 MARKS)***

1..Name the anterior pituitary hormones. Explain the functions of growth hormone=9m

Write Short Notes On: 4 X 4 =16m

2..Explain the consequences of mismatched blood transfusion

3..Draw a labeled diagram of visual pathway

4..List the different types of Hypoxia and Explain any one of them

5..Explain any four functions of hypothalamus

Write Briefly On: 5 X 2 =10m

6..Bohr's effect    7..Gastrin    8..MCV    9..Oral contraceptives    10.Anticoagulants

***PART-B - BIOCHEMISTRY(35 MARKS)***

11.What are the sources and daily requirement of calcium in the body? What is the normal serum calcium level and how is it regulated?=9m

Write Short Notes On: 4 X 4 =16m

12.Respiratory acidosis    13.Absorption and transport of Iron

14.Regulation and energetics of glycolytic pathway.    15.Genetic code

Write Briefly On: 5 X 2 =10m

16.Transamination    17.Essential amino acids    18.Enzyme inhibition    19.Fluorosis

20.Renal glycosuria

**401-FIRST B.D.S. DEG.EXAMINATION-JUNE, 2009-HUMAN PHY. & BIOCHEMISTRY(O.R.)**

***PART-A-PHYSIOLOGY (35 MARKS)***

1..Give the composition of saliva and explain the functions of saliva=9m

Write Short Notes On: 4 X 4 =16m

2.What is asphyxia? Explain the different phases of asphyxia.

3..Explain the baroreceptor mechanism of regulation of blood pressure.

4..Explain the fate of haemoglobin after haemolysis.

5..Explain taste pathway with the help of a labeled diagram.

Write Briefly On: 5 X 2 =10m

6..Tetany    7..Brain – bridge reflex    8..Neuroglia    9..Plasma proteins    10.Haemophilia

***PART-B - BIOCHEMISTRY(35 MARKS)***

11.How is ammonia formed and detoxified in liver?=9m

Write Short Notes On: 4 X 4 =16m

12..Classify enzymes with one example for each class

13.Name any four heteropolysaccharides and their functions

14.Name Ketone bodies. How are they synthesized?    15.Electron transport chain

Write Briefly On=15 X 2 =10m

16.Name the pyrimidine bases    17.Sickel cell anemia    18.Rickets    19.Metabolic acidosis

20.Any four functions of calcium

**B.D.S. DEGREE EXAMINATION – JANUARY, 2009**  
**FIRST BDS EXAMINATION**  
**GENERAL HUMAN PHYSIOLOGY & BIOCHEMISTRY**  
**(New Regulations)**

417 ✓

Time : 3 Hours

Max. Marks : 70

Note: Answer Part A & B in separate answer books. Questions in Part 'A' should not be answered in Part 'B' and vice versa. Otherwise they will not be valued.  
Answer all questions.

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**PART – A (PHYSIOLOGY) – 35 MARKS)**

1. Write in detail formation of urine.

9

**WRITE SHORT NOTES ON:**

4x4=16

2. Vital capacity.
3. Gigantism.
4. Taste buds.
5. Reflex arc.

**WRITE BRIEFLY ON:**

5x2=10

6. Fever.
7. Anticoagulants.
8. Hypoxic hypoxia.
9. Myxedema.
10. All or none law.

**PART – B (BIOCHEMISTRY) -35 MARKS)**

11. Define glycogenesis and glycogenolysis. Describe metabolism of glycogen.

9

**WRITE SHORT NOTES ON:**

4x4=16

12. Synthesis and functions of calcitriol.
13. Electron transport chain and its inhibitors.
14. Lipoproteins and their functions.
15. Role of kidney in regulating pH of blood.

**WRITE BRIEFLY ON:**

5x2=10

16. Heparin
17. Metabolic functions of coenzymes of vit. B<sub>12</sub> (cyanocobalamine).
18. Oncogenes.
19. Fluorosis.
20. Name four important compounds derived from cholesterol.

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**B.D.S. DEGREE EXAMINATION – JANUARY, 2009**  
**FIRST BDS EXAMINATION**  
**HUMAN PHYSIOLOGY AND BIOCHEMISTRY**  
*(Old Regulations)*

Time : 3 Hours

Max. Marks : 70

Note: Answer Part A & B in separate answer books. Questions in Part 'A' should not be answered in Part 'B' and vice versa. Otherwise they will not be valued.

Answer all questions.

**PART – A (PHYSIOLOGY) – 35 MARKS)**

1. What are the phases of Gastric Secretion? Write the composition? Explain how gastric secretion is regulated. 9

**WRITE SHORT NOTES ON:**

4x4=16

2. Name the transport mechanisms in cell membrane.
3. Actions of Insulin.
4. Neuro-muscular transmission.
5. Lung volumes and capacities.

**WRITE BRIEFLY ON:**

5x2=10

6. Types of Muscles.
7. Two actions of Testosterone.
8. Two Errors of Refraction.
9. Anticoagulants.
10. Write values for M.C.H., M.C.V. MCHC.

**PART – B (BIOCHEMISTRY) -35 MARKS)**

11. Write the dietary sources, daily requirements, functions of Calcium. How serum calcium level is regulated? 9

**WRITE SHORT NOTES ON:**

4x4=16

12. Metabolic changes in diabetes mellitus.
13. Abnormal haemoglobins.
14. Functional and nutritional classification of proteins.
15. Competitive enzyme inhibition and its importance in medicine.

**WRITE BRIEFLY ON:**

5x2=10

16. Give coenzyme form and deficiency manifestations of Vitamin B 12.
17. Name the stages of transcription.
18. Biochemical Functions of Copper.
19. Hemoglobinopathies.
20. Give two examples of substrate level phosphorylation.

**401-FIRST B.D.S. DEGREE EXAMINATION – JUNE, 2008--HUMAN PHYSIOLOGY AND  
BIOCHEMISTRY-(OLD REGULATIONS)**

**PART – A (PHYSIOLOGY) – 35 MARKS)**

1..Enumerate the events of cardiac cycle. Describe the pressure changes in the left ventricle of the heart=9m

Write Short Notes On:= 4x4=16m

2..Anticoagulants.      3. Gastrin.      4. Oral contraceptives.      5. Myopia.

Write Briefly On:= 5x2=10m

6..Vital capacity    7. Heat loss mechanism in the body    8. Functions of Bile    9. Micturition reflex  
10.Brown sequard syndrome

**PART – B (BIOCHEMISTRY) -35 MARKS)**

11.What is urea? Enumerate the steps of urea cycle and mention its significance=9m

Write Short Notes On:      4x4=16

12.Lipoproteins and their functions.

13.Name the components of electron transport chain mentioning the site of ATP generation and its inhibitors.

14. Role of carnitine in B-oxidation.      15. Glycogen storage disorders

Write Briefly On:      5x2=10

16. Define gluconeogenesis and name the key enzymes of gluconeogenesis.

17. Metabolic acidosis.      18. Structure of animal starch.

19. Phenylketonuria    20. Give normal levels of the followings: a) Serum amylase.  
b) Serum inorganic phosphorus

**401-B.D.S. DEG. EXAM – FEB, 2008-FIRST BDS EXAM-HUMAN PHY. & BIOCHEMISTRY**

**PART – A (PHYSIOLOGY) – 35 MARKS)**

1. What sensations arise from the skin? How are they carried to the brain?=9m

2. Write short notes on=4x4=16m=a) Aldosterone    b) Colour blindness    c) Narmoblast    d) Rh. Factor

3. Write briefly on:= 5x2=10m=a) Movements of Small Intestines    b) Pacemaker of the heart  
c) Taste buds    c) Artificial breathing    d) Dehydration shock

**PART – B (BIOCHEMISTRY) -35 MARKS)**

4. Mention the liver function tests. Write in detail the van den Bergh test and its importance.=9m

5. Write short notes on:= 4x4=16m= a) Role of kidney in regulating the pH of blood.    b) Galactosemia  
c) Define coenzyme. Classify them with suitable examples.    d) Fate of glucose-6-phosphate.

6. Write briefly on: =5x2=10m-a) Oxidative deamination    b) Prostacycline

c) Important compounds derived from cholesterol    d) Essential amino acids

e) Give normal levels of the following: -i) Blood glucose      ii) Blood urea

**401-NR-AUGUST, 2007-FIRST BDS EXAMINATION-HUMAN PHYSIOLOGY AND BIOCHEMISTRY**

**Part-A (Physiology)**

1. How is respiration regulated? Mention the neural centres and its regulation=9m

Write short notes on: 4 x 4 =16m; 2. Referred pain    3. Functions of Bile    4. Erythropoiesis    5. Micturition reflux

Write briefly on: 5 x 2 =10m; 6. S.A.Node      7. Anti coagulants      8. ADH and its function

9. Movements of Small Intestine      10.Bone and its functions

**Part-B (Biochemistry)**

11. Enumerate the steps of HMP-shunt pathway and mention the significance of the pathway=9m

Write short notes on: 4 x 4 =16m; 12. Essential fatty acids and their importance

13. Enzyme markers of liver disease    14.Deficiency symptoms of Vit. C      15.Blood buffers

Write briefly on: 5 x 2 =10m; 16. Electrophoresis and its applications    17.Functions of phosphorus

18.Metabolic functions of coenzymes of Niacin and thiamine    19.Substrate level phosphorylation

20.Give normal levels of the following: a) Serum sodium      b) Serum potassium:

**APRIL, 2007**

**PART – A (PHYSIOLOGY)**

1. Describe the mechanism of coagulation of blood=9m

2. Write short notes: 4x4=16=a) Functions of Saliva    b)G.F.R.    c)Heart Sounds    d)Functions of Ovary



- Write briefly on: 5x2=10=a) Stages of Deglutition b) Proteolytic Enzymes  
c) Functions of Oxytocin d) Neuron e) Mechanics of Respiration

#### PART – B (BIOCHEMISTRY)

- Describe  $\beta$ -oxidation of fatty acids with energetics involved=9m
- Write short notes on: 4x4=16=a) Plasma proteins b) Effect of temperature and pH on enzyme activity  
c) Glycosuria d) Metabolism of copper
- Write briefly on: 5x2=10=a) Fibrous proteins b) Enzyme inhibition c) Transcription d) Galactosemia  
e) Factors affecting calcium absorption

#### SEPTEMBER-2006

##### Part-A

- What is Micturition Reflex? Describe the process of urine formation=9m
- Write short answers on: 4 x 4 =16m; a) Composition and functions of blood b) Taste pathway  
c) Rh group d) Pancreatic Juice
- Write briefly on: 5 x 2 =10m; a) Cardiac Muscle b) Cretinism c) Muscles of Respiration  
d) Functions of C.S.F. e) Autonomic Nervous System

##### Part-B

- What is the normal fasting blood sugar level? Describe the various processes involved in its regulation=9m
- Write short answers on: 4 x 4 =16m; a) Enzymes of diagnostic importance b) Fatty liver  
c) Diagrammatic representation of urea cycle d) Ketosis
- Write briefly on: 5 x 2=10m; a) Essential amino acids b) Phenylketonuria
- Characteristic of Genetic code d) Factors affecting absorption of iron e) Biochemical functions of Phosphorous

#### FEBRUARY-2006

##### Part-A

- Define arterial blood pressure and describe the regulation of blood pressure=9m
- Write short notes on: 4 x 4 =16m; a) Deglutition b) Surfactant  
c) What hormone regulates calcium absorption in the intestine? d) Reflex action
- Write briefly on: 5 x 2 =10m; a) Movements of small intestines and its physiological significance  
b) How many Heart sounds are there? Explain briefly its mechanism  
c) Factors involved in the interchange of gases in alveoli d) Calcitonin e) Lower motor Neuron lesion

##### Part-B

- What is normal blood glucose level? Discuss the role of hormones in regulating blood glucose level=9
- Write short notes: 4 x 4 =; a) Regulation of serum calcium level b) Lipoproteins and their functions  
c) Role of kidney in regulating pH of blood d) Deficiency symptoms of Vit.A
- Write briefly: 5 x 2 =; a) Glycosuria b) Coenzyme forms of Nicotinic acid and their metabolic functions  
c) Bile salts and their functions d) Provitamins

#### AUGUST-2005 – N.R.

##### Part-A (Human Physiology)

- What is hemostasis? Describe the factors regulating hemostasis. Name two bleeding disorders=9m
- Write short notes on: 4 x 4 =16marks; a) Functions of liver b) Processing of pain in the spinal cord  
c) Regulation of blood pressure d) Glucocorticoids
- Write briefly on: 5 x 2 = a) Hypoxia b) Neuromuscular transmission c) Rods and cones d) Rickets  
e) Functions of proximal tubule

##### Part-B (Biochemistry)

- Write the dietary sources, daily requirements, functions of calcium. How serum calcium level is regulated?=9m
- Write short notes on: 4 x 4 =16marks; a) Essential fatty acids and their functions  
b) What are isoenzymes? Give two examples and their diagnostic importance  
c) Give the functional classifications of proteins with examples d) Glycogen storage disorders
- Write briefly on: 5 x 2 =10m= a) What is gluconeogenesis? Name the key enzymes of gluconeogenesis.  
b) Ketone bodies c) Coenzyme forms of Vit.B12 and their metabolic functions d) Vit. D resistant rickets
- What is calorie? Give the calorific values of foodstuff.

#### MAR/APR.2005. (NEW REGUL.)

##### Part-A (Human Physiology)

- Describe the different phases of deglutition and their regulation =9marks
- Write short note: 4 x 4 =a) Coagulation of blood b) Temperature regulation c) Ovulation d) Insulin

3. Write briefly on: 5 x 2 =10marks; a) Anemia b) Venous return c) Baroreceptors  
d) Tetany e) Functions of distal convoluted tubule

**Part-B (Biochemistry)**

4. Describe the formation and fate of ammonia=9marks  
5. Write short notes on: 4 x 4 =16marks; a) Biologically important peptides  
b) IUB Classification of enzymes c) Glycolysis d) Calcium homeostasis  
6. Write briefly on: 5 x 2 =10marks; a) Enzymes of diagnostic importance in liver diseases  
b) Significance of HMP pathway c) Formation of ketone bodies d) Atherosclerosis  
e) Biochemical functions of Selenium

**OCTOBER, 2004. (NEW REGUL.)**

**Part-A (Human Physiology)**

1. What are the hormones that regulate the Calcium metabolism. Describe regulation of one hormone in detail =9m  
2. Write short notes on: 4 x 4 =16marks; a) Regulation of Salivary secretion  
b) Regulation of muscle tone c) Electrocardiograph d) Antidiuretic hormone  
3. Write briefly =a) Functions of platelets b) Vital capacity c) Chemoreceptors d) Goiter e) Glomerular Filtration  
**Part-B (Biochemistry)**

4. Define glycolysis. Describe anaerobic glycolysis mentioning the bio-energetics=9m  
5. Write short notes on: a) Absorption and transport of iron b) Oral glucose tolerance test  
c) Functions of plasma proteins. d) Synthesis and functions of 1,25 Dihydroxy cholecalciferol  
6. Write briefly on: a) Pellagra b) Give the sources and functions of Iodine c) Renal Glycosuria  
d) Semi essential amino acids e) Give normal values for the following: I) Serum Calcium II) Serum Cholesterol.

**APRIL/MAY, 2004.**

**Part-A**

1. Write in detail the formation of urine =9marks  
2. Write short answers on: 4 x 4 =16marks; a) Pathway for pain b) Phases of gastric secretion  
c) Conduction of Cardiac Impulse d) Testosterone and its actions.  
3. Write briefly on: 5 x 2 =10marks; a) Taste Buds b) Blood groups c) Anticoagulants  
d) Centres for respiration e) Hormones of Posterior Pituitary.

**Part-B**

4. What is the normal blood urea level. Describe the synthesis and fate of urea in our body =9marks  
5. Write short answers on: a) Hormones that regulate Blood sugar b) Iso Enzymes c) Transamination  
d) Deficiency of Vitamin 'D'  
6. Write briefly: 5 x 2 =a) Galactosemia b) Bile Pigments c) Serum Cholesterol d) Blood buffers e) Heparin

**OCTOBER, 2003. (N.R.)**

**Part-A (Human Physiology)**

1. What is the normal blood pressure? How is it regulated in human body =9marks  
2. Write short answers on: 4 x 4 =16marks;  
a) List the hormones secreted by the anterior pituitary. How are they released.  
b) What is the importance of pupillary reaction? What is your interpretation if the pupil is dilated and fixed.  
c) What is the role played by Juxta Medullary Apparatus.  
d) Where do you find receptors for taste and how are they stimulated. Give their function.  
3. Write briefly on: 5 x 2 =10marks; a) What are the components of Reflex arc?  
b) List four functions of Saliva c) Mention the types of movements observed in the small intestine.  
d) Explain the role of the alveolar surfactant in the normal functioning of the lung  
e) What are the effects of mismatched blood transfusion.

**Part-B (Biochemistry)**

4. Describe the factors affecting the activity of Enzymes. Write a note on clinical importance of Enzymes  
5. Write short answers on: 4 x 4 =16marks; a) Riboflavin b) Mucopolysaccharides  
c) Detection of Ketone Bodies in the urine d) Creatine Phosphokinase  
6. Write briefly on: 5 x 2 =10marks; a) Bile salts b) Normal pH of Serum  
c) Importance of Electrophoresis d) Met Hemoglobin e) Differences between CPS-I and CPS-II

**APRIL, 2003.**

**Part-A (Human Physiology)**

1. What are the stages in Deglutition? Describe them, in detail with a note on Dysphagia =9marks
2. Write short : 4 x 4 =a) Functions of Placenta b) Rh.Incompatability c) J.G.apparatus d) Artificial respiration
1. Write briefly on: 5 x 2 =a) Types of lymphocytes b) Heart Sounds c) Neuron d) Types of synapse e) Functions of cerebellum

**Part-B**

2. Name the abnormal constituents of urine and the pathological conditions where they are seen ? How will you detect sugar in the urine =9marks
3. Write short answers on: 4 x 4=a) Name the aromatic amino acids and inborn errors in any One of them. b) Glycogen c) Enzymes related to myocardial infarction d) Deficiency manifestations of thiamine
4. Write brief answers on: 5 x 2 =10marks=a) Name the non-reducing sugar. What are the components? b) What is 'good' cholesterol? Why is it so called c) What are polyunsaturated fatty acids? Give examples and mention its clinical importance d) Name two antioxidants and their functions e) What is the normal serum level of Bilirubin? Name the pathological conditions where it is raised.

**OCTOBER, 2002**

**Part-A ( Human Physiology )**

1. Give the composition of blood and explain the importance of plasma =9marks
2. Write short answers on: 4 x 4 =16marks a) Respiratory muscles b) Functions of Liver c) Parathyroid hormone d) Enumerate the functions of Skin.
3. Write briefly on: 5 x 2 =10marks a) Name the ovarian Hormones b) Receptors for vision c) Hormones regulating Blood Glucose d) Muscles of Inspiration e) Properties of Cardiac Muscle

**Part-B**

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**FIRST B.D.S. – 08<sup>th</sup> AUGUST, 2001.**

Time-3hrs, Marks.80 – Answer all questions – Answer Part-A & B in separate answer books

**Part-A – Physiology**

1. Where are the Respiratory centers located. How is respiration regulated by neural and chemical mechanism=10m
2. Short Notes: a) Blood groups b) Composition and functions of saliva c) ECG d) Pain Pathway e) Myxedema f) Functions of kidney 6x5=30marks

**Part-B – Biochemistry**

1. Describe the sources, biochemical functions, daily requirement & deficiency manifestations of Vitamin-D =10m
2. Short Notes: a) Blood buffers b) Poly unsaturated fatty acids c) Renal glycosuria d) Serum cholesterol e) Enzyme action f) Detection of sugar in the urine

**6<sup>th</sup> FEBRUARY 2000.**

**Part-A – Physiology**

1. Draw and describe the neural regulation of respiration =10marks
2. Short notes: a) Functions of Gall bladder b) Antidiuretic hormone on renal tubule c) Functions of plasma proteins d) Mention three distinctive properties of the cardiac muscle. Explains the basis of anyone. e) Accommodation by the eye f) Draw and label pyramidal pathway -6x5=30marks

**Part-B – Biochemistry**

1. Name the hormones that increase the blood glucose level. Explain the mechanism in any one of them =10m
2. Short Notes: a) Lipolytic enzymes of the alimentary tract. B) Citric acid cycle c) Explain Van Den bergh test d) Mention reactions where reduced NADP is required e) Vitamin A deficiency symptoms f) Normal pH of blood =6x5=30marks

**6<sup>th</sup> OCTOBER, 1999.**

**Part-A (Human Physiology)**

1. What is cardiac output? Enumerate the methods of determining it in man =10marks
2. Write short notes on: 6x5=a) Reticulocyte b) Seat of fatigue c) Vital capacity d) Parathormone e) Pregnancy test f) Cerebro-spinal fluid

**Part-B (Biochemistry)**

3. Give an account of the steps of the Citric Acid cycle. Explain why it is known as Terminal Oxidative Pathway =10marks
4. Write short notes on: 6x5=a) Bile salts      b) What is the role of gastric juice in protein digestion  
c) Standard urea clearance      d) Renal threshold for glucose      e) Absorption of fat      f) Vitamin-B12

### **8<sup>th</sup> APRIL, 1999.**

#### Part-A (Physiology)

1. Describe the phase of gastric secretion. What is the composition of gastric juice =10marks
2. Write short notes on: 6x5=30m=a) Neutrophil leucocyte      b) Safe period      c) Role of calcium  
d) Changes in one cardiac cycle      e) Functions of cerebro spinal fluid      f) Organ of Corti

#### Part-B (Biochemistry)

3. Name the Polysaccharides present in your diet. Describe the digestion, absorption of any one of them in the body. How will you detect sugar in the urine =10marks
4. Write short notes on: 6x5=a) Cerebrosides      b) Prostaglandins      c) Ceruloplasmin  
d) Pyridoxal phosphate      e) S.G.O.T.      f) Bile salts

### **OCTOBER, 1998.**

#### Part-A (Physiology)

1. Give an account of the nervous control of respiration =10marks
2. Write short: 6x5=a) Special junctional tissues of the heart      b) Mismatched blood transfusion reaction  
c) Functions of the middle ear      d) Cretin      e) Synapse      f) Role of bile salts in digestion

#### Part-B (Biochemistry)

3. What are bile salts and bile pigments? How are they identified in the urine? Describe the Biochemical tests done in a case of jaundice. What is the normal level of serum bilirubin =10m
4. Write short notes on: 6x5=a) Ketone bodies      b) Good cholesterol      c) Transamination  
d) Deficiency manifestations of Vitamin-A      e) Heparin      f) Serum Alkaline phosphatase

### **APRIL, 1998.**

#### Part-A (Physiology)

1. Define blood pressure. Mention the important factors controlling it. =10marks
2. Write short notes on: 6x5=30marks a) Nephron      b) Reflex arc c) Taste Receptors  
d) Chemical regulation of respiration      e) Oxytocin      f) Rigor Mortis

#### Part-B (Biochemistry)

3. What are disaccharides. Give examples how will you identify them in the laboratory. What is the normal level of Glucose in Blood =10marks
4. Write short notes on: 6x5=30marks a) Amylose and Amylopectin      b) Colloid and Emulsion  
c) Saturated and unsaturated Fat      d) Albumin and Globulin      e) DNA & RNA      f) Ascorbic acid

### **OCTOBER, 1997.**

#### Part-A – Physiology

1. Describe the mechanism of coagulation. Name two anti-coagulants =10marks
2. Short Notes: a) Homeostasis      b) Describe the phases of Menstrual cycle      c) Myopia      d) Functions of Frontal lobe  
e) Draw and label a normal Electro Cardio gram. What is P-R interval      f) Peristalsis =6x5=30marks

#### Part-B – Biochemistry

3. Give an account of the source, metabolic functions, daily requirement, deficiency manifestations of Vitamin-C
1. Write briefly on: a) Enzyme poisons      b) Ketone bodies      c) Fate of Bilirubin in the body
- d) Structure and properties of cholesterol      e) Detection of Fructose in the urine      f) Lactic acid dehydrogenase=5x5

### **APRIL 1997.**

#### Part-A – Physiology

1. Give an account of mechanism of regulation of arterial blood pressure =10marks
2. Short Notes: a) How are white blood corpuscles (W.B.C.) classified? What are the functions?  
b) What is the function of gall bladder      c) Describe a nephron and enumerate the functions of each part  
d) Draw and label the taste pathway      e) Describe the functions of placenta =5x5=25marks

#### Part-B – Biochemistry

1. Outline the steps ( schematically) involved in TCA cycle with enzymes and cofactors =10marks



2. Short Notes: a) Gastric Hcl b) Starch Hydrolysis c) Deficiency manifestations of Vitamin D  
d) Bile salts e) Polyunsaturated Fatty acids f) Serum Alkaline Phosphates =6x5=30marks

**OCTOBER, 1996.**

**Part-A (Physiology)**

1. Describe the structure & functions of voluntary muscle (skeletal muscle). How does it differ from cardiac muscle
2. Write briefly on the following: 6x5=30marks a) Carotid sinus b) Describe the stages of deglutition  
c) What is the physiological basis of contraceptive pill method?  
d) What is the role played by platelets e) Organ of Corti f) Describe the neurone & enumerate the functions

**Part-B (Biochemistry)**

3. How is urea formed in the body? =10marks
4. Write short notes on: 6x5=30marks a) Serum cholesterol b) Abnormal constituents of urine c) Role of iron in the body  
d) NADP e) Mention the normal level of: 1. Serum calcium and serum phosphorous 2. Serum Na & K  
3. SGOT and SGPT 4. Serum creatinine and serum cholesterol 5. Blood sugar and urea.

**APRIL, 1996.**

**Part-A**

1. Give an account of the structure and functions of skin =10marks
2. Write short notes on: 5x5=25marks a) Discuss briefly the functions of plasma proteins  
b) Define stroke volume. Mention the factors regulating cardiac output  
c) Briefly give the composition and functions of pancreatic juice  
d) Outline the chemical factors controlling respiration e) Write a briefly on parathormone.

**Part-B**

3. How are proteins digested. Indicate the specific site at which proteolytic enzymes act. Add a note on Amino acid pool =10marks
4. Write short notes on: 6x5=30marks a) Various lipoproteins circulating in human plasma and their function.  
b) Draw and normal G.T.T. Curve and compare it with different diabetic conditions.  
c) Name two reactions in which the following Coenzymes participate: a) NADPH b) BIOTIN  
d) What is the normal calcium level in blood? How is it regulated?  
e) Components of electron transport chain and sites of ATP formation.

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