

## FEBRUARY 2005

[KM 1505]

Sub. Code : 1505

B.N.Y.S. DEGREE EXAMINATION.

(New Regulations)

First Year

Part II

Paper III — HUMAN PHYSIOLOGY — I

Time : Three hours

Maximum : 100 marks

Sec. A & B : Two hours and forty minutes  
Sec. A & B : 80 marks

M.C.Q. : Twenty minutes

M.C.Q. : 20 marks

Answer Sections A and B in the **SAME** Answer Book.

Answer **ALL** questions.

SECTION A — ( $2 \times 15 = 30$  marks)

1. Define erythropoiesis. Describe the stages of erythropoiesis? Discuss the factors necessary for erythropoiesis.
2. Define cardiac cycle. Describe various events of cardiac cycle with pressure and volume change. Add a note on heart sounds.

SECTION B — ( $10 \times 5 = 50$  marks)

3. Define hypoxia. Classify hypoxia. Describe its characteristics.
4. What are the modes of transport of substance across biological membrane? Describe active transport.

5. Mention physiological basis of blood grouping. Describe ABO and RH system.

6. Name phases of deglutition. Explain second phase of deglutition.

7. Glomerular filtration rate.

8. Diagrammatically represent a normal ECG. Explain causes for different waves.

9. Functions of liver.

10. Describe oxygen haemoglobin dissociation curve.

11. Functions of skin.

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

**AUGUST 2005**

**[KN 1505]**

**Sub. Code : 1505**

**B.N.Y.S. DEGREE EXAMINATION.**

**(New Regulations)**

**First Year**

**Part II**

**Paper III — HUMAN PHYSIOLOGY — I**

**Time : Three hours**

**Maximum : 100 marks**

**Theory : Two hours and  
forty minutes**

**Theory : 80 marks**

**M.C.Q. : Twenty minutes**

**M.C.Q. : 20 marks**

**Answer ALL questions.**

**I. Long Essay : (2 × 15 = 30)**

1. Describe the mechanism of nervous and chemical regulation of respiration
2. Name the coagulation factors. Describe intrinsic pathway for clotting.

**II. Short Notes : (10 × 5 = 50)**

1. JUXTA GLOMERULAR APPARATUS.
2. HEART SOUNDS.
3. What is cardiac output? Explain cardiovascular changes occurring during exercise.

4. Explain the conducting system of heart.
5. What is Asphyxia? Describe changes occurring in Asphyxia.
6. Classify jaundice. How do you differentiate them?
7. Describe defecation reflex.
8. Pancreatic juice.
9. Classify LEUCOCYTES. Describe morphology of each type of leucocytes.
10. Explain primary and secondary active transport with examples.

FEBRUARY 2006

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First Year

Part II

Paper III — HUMAN PHYSIOLOGY — I

Time : Three hours

Maximum : 100 marks

Theory : Two hours and  
forty minutes

Theory : 80 marks

M.C.Q. : Twenty minutes

M.C.Q. : 20 marks

Answer ALL questions.

I. Long Essay : (2 × 15 = 30)

1. What is Landsteiner's Law? Describe ABO and RH systems. Add a note on clinical importance of blood grouping. (2 + 10 + 3)

2. Define hypoxia. Name the types of hypoxia. Explain the principle types of hypoxia. (2 + 2 + 11)

II. Short notes : (10 × 5 = 50)

1. Describe the chemical regulation of respiration.

2. Draw a diagram and explain the different waves in normal ECG.

3. Name the types of hemoglobin. Explain fate of hemoglobin following hemolysis.

4. Tabulate the differences between first and second heart sounds.

5. Name the properties of white blood cells and explain the functions of different leucocytes.

6. Name the functions of stomach. Describe the composition of gastric juice.

7. Explain functions of bile.

8. Name the salivary glands. Explain the functions of saliva.

9. Name the types of sweat glands. Explain the difference between them.

10. Explain the normal morphology and functions of red blood cells.

**AUGUST 2006**

**[KP 1505]**

**Sub. Code : 1505**

**B.N.Y.S. DEGREE EXAMINATION.**

**(New Regulations)**

**First Year**

**Part II**

**Paper III — HUMAN PHYSIOLOGY — I**

**Time : Three hours**

**Maximum : 100 marks**

**Theory : Two hours and  
forty minutes**

**Theory : 80 marks**

**M.C.Q. : Twenty minutes**

**M.C.Q. : 20 marks**

**Answer ALL questions.**

**I. Long Essay :**

1. Define coagulation. Write the various factors and mechanism. (20)
2. What is cardiac cycle? Describe about the events of cardiac cycle. (15)
3. Regulation of respiration – describe its nervous and chemical mechanisms. (15)

**II. Write short notes on : (6 × 5 = 30)**

1. Write about the functions of blood.
  2. The effects of exercise on cardiovascular system.
  3. Explain the transport of oxygen in blood.
  4. Define hypoxia. Explain the types and causes.
  5. Mention the functions of saliva.
  6. Write about the composition of pancreatic juice.
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August 2008

[KT 1505]

Sub. Code : 1505

B.N.Y.S. DEGREE EXAMINATION.

(New Regulations)

First Year

Part II

Paper III — HUMAN PHYSIOLOGY — I

Q.P. Code : 821505

Time : Three hours

Maximum : 100 marks.

Answer ALL questions.

I. Long Essay : (2 × 15 = 30)

1. Describe the mechanism of coagulation with a note on coagulation disorders.

2. Define blood pressure. Describe how the blood pressure is regulated. How do you measure the blood pressure in man?

II. Short notes : (10 × 5 = 50)

1. Stages of deglutition.

2. Compliance of lungs.

3. Heart sounds.

4. Micturition reflex.

5. Neural control of respiration.

6. Transport across a semi permeable membrane.

7. Factors influencing GFR.

8. Absorption of fat.

9. Succus entericus.

10. Functions of saliva and its composition.

III. Write short answer questions : (10 × 2 = 20)

1. Residual volume.

2. Christmas factor.

3. Vaso vagal syncope.

4. Gastro colic reflex.

5. ADUD cells.

6. Dyspnea.

7. Steatorrhea.

8. Agglutinin.

9. Haemolytic anemia.

10. Define steatorrhea.

FEBRUARY - 2009

**[KU 1505]**

**Sub. Code : 1505**

**B.N.Y.S. DEGREE EXAMINATION.**

**(New Regulations)**

**First Year — Part II**

**Paper III — HUMAN PHYSIOLOGY — I**

**Q.P. Code : 821505**

**Time : Three hours**

**Maximum : 100 marks**

**Answer ALL questions.**

**I. Long Essay : (2 × 15 = 30)**

**1. Write an essay on mechanism of urine formation and factors regulating GFR.**

**2. Give an account of the gastro intestinal hormones with reference to**

**(a) Site of production**

**(b) Regulation of Secretion**

**(c) Functions.**

FEBRUARY - 2009

II. Short notes : (10 × 5 = 50)

1. Homeostasis.
2. Leucocytes.
3. Cardiac Arrhythmias.
4. Haemodynamics.
5. Function of renal nerves.
6. Cyanosis.
7. Artificial respiration.
8. Korotkoff sound.
9. Lung Function Test.
10. Heart murmurs.

III. Short answers : (10 × 2 = 20)

1. Thalassemias.
2. Sick cell anemia.
3. Bundle of HIS.
4. Choleretic.
5. Cholecystokinin.

6. Tidal volume.

7. Cardiac output.

8. Pinocytosis.

9. Hypoxic Hypoxia.

10. Causes of inverted T-wave in ECG.

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August - 2009

**[KV 1505]**

**Sub. Code : 1505**

**B.N.Y.S. DEGREE EXAMINATION.**

**(New Regulations)**

**First Year — Part II**

**Paper III — HUMAN PHYSIOLOGY — I**

**Q.P. Code : 821505**

**Time : Three hours**

**Maximum : 100 marks**

**Answer ALL questions.**

**I. Long Essay : (2 × 15 = 30)**

- 1. Explain Cardiac cycle, its pressure and volume changes during cardiac cycle.**
- 2. What are erythrocytes, its stages of development, life span and fate of erythrocytes?**

**II. Short notes : (10 × 5 = 50)**

- 1. Alatic acid debt.**
- 2. Mechanism of muscular contraction.**

August - 2009

3. Periodic breathing.
4. Lung compliance.
5. Composition and functions of saliva.
6. Blood transfusion and its importance.
7. Size and shape of action potential.
8. Blood groups.
9. Mechanism of urine formation.
10. Renin-angiotensin mechanism.

III. Write short answers :

(10 × 2 = 20)

1. Bohr's effect.
2. Formation of bile.
3. Deglutitation and its stages.
4. Marey's law.
5. Rouleaux formation.

6. Surfactant.
  7. Inflammation.
  8. Segmentation.
  9. Composition of pancreatic juice.
  10. Properties of cardiac muscle.
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**February 2010**

**[KW 1505]**

**Sub. Code: 1505**

**B.N.Y.S. DEGREE EXAMINATION.**

**(New Regulations)**

**First Year**

**Part II**

**Paper III – HUMAN PHYSIOLOGY - II**

***Q.P. Code : 821505***

**Time : Three hours**

**Maximum : 100 marks**

**Answer ALL questions.**

**I. Long Essay:**

**(2 x 15 = 30)**

1. Detail note on mechanism of respiration and exchange of gases at different levels.  
Add note on regulation of respiration.
2. Describe the mechanism of urine formation and factors affecting GFR.

**II. Short Notes:**

**(10 x 5 = 50)**

1. Heart block.
2. Blood groups.
3. Mechanism and functions of Gastric secretion.
4. Movements of the large intestine.
5. Lung function tests.
6. Regulation of Blood pressure.
7. Skin and its function.
8. Cutaneous circulation.
9. Functions and properties of leucocytes.
10. Murmurs.

**III. Short Answers:**

**(10 x 2 = 20)**

1. Body fluids.
  2. Types of Haemoglobin.
  3. Types of Immunity.
  4. Nerve supply to heart.
  5. ECG leads.
  6. Composition of inspired air.
  7. Bile Salts.
  8. Define Deglutition.
  9. Four abnormal constituents of urine.
  10. Hyperbarrism.
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August 2010

[KX 1505]

Sub. Code: 1505

**B.N.Y.S. DEGREE EXAMINATION.**

**(New Regulations)**

**First Year**

**Part II**

**Paper III – HUMAN PHYSIOLOGY - I**

***Q.P. Code : 821505***

**Time : Three hours**

**Maximum : 100 marks**

**Draw neat diagram wherever necessary.**

**Answer ALL questions.**

**I. Essay Questions:**

**(2 x 15 = 30)**

1. Explain in detail about the Structure and Functions of Skin.
2. What is the Cardiac output? Explain the measurement and regulation of Cardiac output.

**II. Short Notes:**

**(10 x 5 = 50)**

1. Lung Volume and Capacity.
2. Coagulation factors.
3. Types of Jaundice.
4. Transport mechanisms.
5. Entero – hepatic circulation.
6. Regulation of HCL Secretion.
7. Physiology of Micturition.
8. Measurement of Blood pressure.
9. Composition of blood.
10. Structure of Cell.

**III. Short Answers:**

**(10 x 2 = 20)**

1. What is Electrical potential?
  2. Define Homeostasis.
  3. Hazards of blood transfusion.
  4. What is Splanchnic Circulation?
  5. Surfactant.
  6. Define Orthopnea.
  7. Composition of Saliva.
  8. Define Mastication.
  9. Define Glomerular Filtration.
  10. Acclimatization.
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[KY 1505]

FEBRUARY 2011

Sub. Code: 1505

**FIRST B.N.Y.S. DEGREE EXAMINATION**

**(New Regulations)**

**PART - II**

**PAPER III – HUMAN PHYSIOLOGY - I**

**Q.P. Code: 821505**

**Time : Three Hours**

**Maximum : 100 marks**

**Answer ALL questions**

**I. Essay Questions:**

**(2 x 15 = 30)**

1. Define cardiac cycle, Describe various events of cardiac cycle with pressure and volume changes.
2. Describe the Neural and chemical regulation of respiration.

**II. Write notes on:**

**(10 x 5 = 50)**

1. RH factor.
2. Counter current mechanism – In kidney.
3. Movements of large intestine.
4. Heart sounds.
5. Electro cardiogram.
6. Pulmonary circulation.
7. Blood Groups.
8. Pernicious anemia.
9. Acidification of urine.
10. Pulmonary function tests.

**III. Short answers on:**

**(10 x 2 = 20)**

1. Marey's reflex.
2. Sneezing reflex.
3. Angina Pectoris.
4. Surfactant.
5. Hering – Breuer reflex
6. Composition of Bile.
7. Osmosis.
8. Serum.
9. Land Steiner's Law.
10. Meissner's Plexus.

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**August 2011**

**[KZ 1505]**

**Sub. Code: 1505**

**B.N.Y.S. DEGREE EXAMINATION.**

**First Year**

**(Part II)**

**Paper III – HUMAN PHYSIOLOGY I**

**Q.P. Code : 821505**

**Time : Three hours**

**Maximum : 100 marks**

**Answer ALL questions.**

**I. Essay questions:**

**(2X15=30)**

1. Describe the transport of oxygen in blood.
2. Define micturition with the help of diagram. Describe micturition reflex.

**II. Short Notes:**

**(10X5=50)**

1. Explain "Triple response".
2. How is lymph formed? Explain why oedema occurs with blockage of lymph vessels.
3. Describe the oesophageal phase of deglutition. What is Achalasia cardia?
4. Describe tubular reabsorption of glucose.
5. Explain the role of surfactant in pulmonary function.
6. Describe the structure and function of the different types of junctions found between cells.
7. Outline the mechanism of peristalsis.
8. Explain the steps of phagocytosis.
9. Explain Frank Starling's law of the heart.
10. Describe the factors which determine the rate of diffusion across cell-membrane.

**III. Short Answer:**

**(10X2=20)**

1. Define Apoptosis.
2. Define Plasmapheresis.
3. Composition of Succus entericus.
4. Pheromones.
5. Glomerulo tubular feedback.
6. Hering – Breuer reflex.
7. Pacemaker potential.
8. Erythroblastosis fetalis.
9. Phasic changes in coronary blood flow.
10. Non-respiratory functions of respiratory tract.

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**February 2012**

**[LA 1505]**

**Sub. Code: 1505**

**B.N.Y.S. DEGREE EXAMINATION.  
First Year-Part II  
Paper III- HUMAN PHYSIOLOGY-I  
Q.P. Code: 821505**

**Time: Three Hours**

**Maximum: 100 marks**

**Answer ALL questions**

**I. Elaborate on:** **(2x15=30)**

1. Describe the mechanism involved in concentration of Urine
2. Explain the composition, function and regulation of secretion of bile. Add a note on enterohepatic circulation.

**II. Write notes on:** **(10x5=50)**

1. Edema
2. Renal tubular reabsorption
3. Periodic breathing
4. Hunger contraction
5. Explain the measurement of cardiac output using Fick's principle
6. Role of blood in the maintenance of Acid-base balance
7. Heart Sounds
8. Functions of skin
9. Synthesis of haemoglobin
10. Bohr's and Haldane's effect

**III. Short Answers** **(10x2=20)**

1. Properties of Cardiac muscle
2. Plasma protein
3. Aquaporins
4. Apnea
5. Peptide YY
6. Oxygen debt
7. Uremia
8. Automatic bladder
9. Cell Adhesion Molecules
10. Vasovagal reflex

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[LB 1505]

Sub. Code: 1505

**FIRST YEAR B.N.Y.S. DEGREE EXAM – AUGUST 2012**

**Paper – III HUMAN PHYSIOLOGY – I**

**Q.P. Code: 821505**

**Time: 180 Minutes**

**Maximum: 100 marks**

**Answer ALL questions**

**I. Elaborate on:**

**Pages Time Marks  
(Max.)(Max.)(Max.)**

- |                                                                                                                                                |    |    |    |
|------------------------------------------------------------------------------------------------------------------------------------------------|----|----|----|
| 1. Give a schematic diagram and explain process of blood coagulation in a test tube. Explain how intravascular clotting is normally prevented. | 16 | 25 | 15 |
| 2. Define blood pressure. Describe the role of baroreceptors and hormones in regulating blood pressure.                                        | 16 | 25 | 15 |

**II. Short notes on:**

- |                                                                                     |   |   |   |
|-------------------------------------------------------------------------------------|---|---|---|
| 1.Explain the causes and features of Hypoxia. Add a note on mountain sickness.      | 3 | 8 | 5 |
| 2.Explain four special features of renal circulation.                               | 3 | 8 | 5 |
| 3.Explain the defecation reflex.                                                    | 3 | 8 | 5 |
| 4. Describe the steps in fibrinolysis. Give its significance.                       | 3 | 8 | 5 |
| 5. List the properties of cardiac muscle. Explain any one of them.                  | 3 | 8 | 5 |
| 6. Describe the mechanism of active transport of substances through cell membrane.  | 3 | 8 | 5 |
| 7. Describe the role of lymphocytes in immune mechanisms.                           | 3 | 8 | 5 |
| 8.Describe the gastric phase of gastric juice secretion.                            | 3 | 8 | 5 |
| 9. Describe the effects of ADH on renal tubules and its effects on urine formation. | 3 | 8 | 5 |
| 10. Describe the role of Haldane effect in the transport of CO <sub>2</sub> .       | 3 | 8 | 5 |

**III. Short Answers on:**

- |                                                              |   |   |   |
|--------------------------------------------------------------|---|---|---|
| 1. What is 'Osmosis'? Give the meaning of isotonic solution. | 1 | 5 | 2 |
| 2. Define and explain resting membrane potential.            | 1 | 5 | 2 |
| 3. What is hyaline membrane disease?                         | 1 | 5 | 2 |
| 4. What is cross matching? What are its types?               | 1 | 5 | 2 |
| 5. What is Windkessel effect?                                | 1 | 5 | 2 |
| 6. Explain entero – hepatic circulation.                     | 1 | 5 | 2 |
| 7. Sino – aortic reflex.                                     | 1 | 5 | 2 |
| 8. Effects of sympathetic stimulation of heart.              | 1 | 5 | 2 |
| 9. Define Lung compliance. Give the normal value.            | 1 | 5 | 2 |
| 10. What is Anaemia? Name 4 types.                           | 1 | 5 | 2 |

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**FIRST B.N.Y.S. DEGREE EXAMINATION**

**PAPER III – HUMAN PHYSIOLOGY - I**

***Q.P. Code: 821505***

**Time : Three Hours**

**Maximum : 100 marks**

**Answer ALL questions**

**I. Essay Questions:**

**(2 x 15 = 30)**

1. Define Cardiac cycle. Explain the various events in cardiac cycle.  
Add a note on pressure changes during cardiac cycle.
2. Explain the mechanism of urine formation. Add a note in renal function tests.

**II. Write notes on:**

**(10 x 5 = 50)**

1. Explain the release and functions of Gastro-intestinal hormones.
2. Define homeostasis. Explain its mechanism.
3. Explain the intrinsic mechanism of coagulations of blood.
4. Explain the composition and functions of pancreatic juice
5. Explain defecation reflex and add a note on constipation.
6. Define Juxtaglomerular Apparatus. Write its functions.
7. Write about the mechanism in regulation of body temperature.
8. Describe heart sounds. Add a note on cardiac murmur.
9. Describe cardiovascular adjustments during exercise.
10. Explain the mechanism of exchange of respiratory gases.

**III. Short answers on:**

**(10 x 2 = 20)**

1. Explain types of sleep.
2. What is micturation reflex.
3. Define Eupnea.
4. What mountain sickness.
5. What is cyanosis.
6. What is extra systole.
7. Describe epocrine glands.
8. Explain Dead space.
9. What are procoagulants.
10. Explain plasmapheresis.

**FIRST B.N.Y.S. DEGREE EXAMINATION**

**PART- II**

**PAPER III – HUMAN PHYSIOLOGY - I**

***Q.P. Code: 821505***

**Time : Three Hours**

**Maximum : 100 marks**

**Answer ALL questions**

**I. Essay Questions:**

**(2 x 15 = 30)**

1. Explain the mechanism of respiration. Add a note on alveolar ventilation
2. Explain the Gastrointestinal movements. Add a note on Gastric emptying

**II. Write notes on:**

**(10 x 5 = 50)**

1. Define Arrhythmia and classify it.
2. Describe renal function tests.
3. What are bile salts? Write their functions.
4. Explain the regulation of acid base balance and results of disturbance of acid base balance.
5. Define ECG. Explain the waves, intervals and segments of normal ECG.
6. Describe blood indices
7. Define immunity. What are the different types of immunity
8. Explain counter current mechanism.
9. Explain the factors maintaining cardiac output.
10. Explain lung volumes, capacities and their measurements.

**III. Short answers on:**

**(10 x 2 = 20)**

1. Define chemoreceptors
2. What is acclimatization?
3. Explain Hyperkalemia.
4. What are Diuretics?
5. What are Brunner's glands?
6. Define pernicious anemia.
7. Explain Cholecystocytes.
8. What are T-lymphocytes?
9. Explain pinocytosis and phagocytosis.
10. What are carrier proteins?

**FIRST B.N.Y.S. DEGREE EXAMINATION**

**PAPER III – HUMAN PHYSIOLOGY - I**

***Q.P. Code: 821505***

**Time : Three Hours**

**Maximum : 100 marks**

**Answer ALL questions**

**I. Essay Questions:**

**(2 x 15 = 30)**

1. Explain the transport of oxygen and carbondioxide in blood.
2. Explain the composition, function and regulation of secretion of pancreatic juice.

**II. Write notes on:**

**(10 x 5 = 50)**

1. Write a note on factors regulations GFR (Glomerular Filtration Rate)
2. Note on process of concentration of urine
3. Note on mechanism of secretion of gastric juice
4. Note on movements of large intestine
5. Note of cardiac murmur
6. Note on oxygen haemoglobin dissociation curve
7. Briefly describe about nutrition deficiency anemia
8. Note on active transport
9. Explain about the regulation of gastric secretion
10. Note on factors maintaining cardiac output

**III. Short answers on:**

**(10 x 2 = 20)**

1. Define cardiac output
2. Define residual volume
3. Hering – Breuer reflex
4. What is serum
5. Define erythropoiesis
6. Define osmosis
7. What are the types of ribosomes
8. What is vago vagal reflex
9. What is thalassemia
10. What is the function of suppressor T cells

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**FIRST B.N.Y.S. DEGREE EXAMINATION**

**PAPER III – HUMAN PHYSIOLOGY - I**

***Q.P. Code: 821505***

**Time : Three Hours**

**Maximum : 100 marks**

**Answer ALL questions**

**I. Essay Questions:**

**(2 x 15 = 30)**

1. Define Respiration. Explain in detail about the mechanism of regulation of respiration.
2. Describe the mechanism of concentration of Urine.

**II. Write notes on:**

**(10 x 5 = 50)**

1. Heart Sounds.
2. Gastric Emptying.
3. Coagulation of blood.
4. Renin – Angiotensin mechanism.
5. Tight Junction.
6. Cholecystokinin.
7. Factors affecting GFR.
8. Anemia & its types.
9. ECG.
10. Defecation.

**III. Short answers on:**

**(10 x 2 = 20)**

1. Apocrine Gland.
2. Hemorrhage.
3. Landstainer's Law.
4. Homeostasis.
5. VO<sub>2</sub> max.
6. Thromboxane A<sub>2</sub>.
7. Prophyrin.
8. Surfactant.
9. Marey Reflex.
10. Phagocytosis.

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**FIRST B.N.Y.S. DEGREE EXAMINATION**

**PAPER III – HUMAN PHYSIOLOGY - I**

***Q.P. Code: 821505***

**Time : Three Hours**

**Maximum : 100 marks**

**Answer ALL questions**

**I. Essay Questions:**

**(2 x 15 = 30)**

1. Explain in detail about the development of Humoral Immunity.
2. Describe the composition, function and regulation of secretion of Gastric Juice.

**II. Write notes on:**

**(10 x 5 = 50)**

1. Heart Sounds.
2. Counter Current Multiplier.
3. Transport of Oxygen in blood.
4. Factors affecting Cardiac Output.
5. Acid Base Buffer system.
6. Functions of Skin.
7. Echo cardiogram.
8. Erythropoiesis.
9. Periodic Breathing.
10. Micturition.

**III. Short answers on:**

**(10 x 2 = 20)**

1. Lewis Triple response.
2. Defecation.
3. Oxygen Debt.
4. Symport.
5. Macula Densa.
6. Tidal Volume.
7. Gastrin.
8. Dead Space.
9. Fick Principle.
10. Osmosis.

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**FIRST B.N.Y.S. DEGREE EXAMINATION**

**PAPER III – HUMAN PHYSIOLOGY - I**

**Q.P. Code: 821505**

**Time : Three Hours**

**Maximum : 100 marks**

**Answer ALL questions**

**I. Essay Questions:**

**(2 x 15 = 30)**

1. Define erythropoiesis. List the different stages of erythropoiesis.  
Describe the changes, which take place in each stage and the factors necessary for erythropoiesis.
2. Define cardiac cycle.  
Describe various events of the cardiac cycle with pressure and volume changes.

**II. Write notes on:**

**(10 x 5 = 50)**

1. Write short note on functions of white blood cells.
2. Write the process of acidification of urine.
3. Write notes on ECG leads.
4. Nervous regulation of respiration.
5. Respiratory changes during exercise.
6. Cell junction – different types.
7. Homeostasis in the body with example.
8. Note on blood grouping.
9. Note on cellular mediated immunity.
10. Renin – angiotensin system - Kidney.

**III. Short answers on:**

**(10 x 2 = 20)**

1. What is dead space?
2. What is stroke volume?
3. What is stretch reflex?
4. What is surfactant?
5. What is the use of spirometer?
6. What is the main function of salivary amylase?
7. What is inspiratory reserve volume? Write the value.
8. What is the cause for pernicious anemia?
9. Write the types of white blood cells.
10. Define bulk flow.

**FIRST B.N.Y.S. DEGREE EXAMINATION**

**PAPER III – HUMAN PHYSIOLOGY - I**

***Q.P. Code: 821505***

**Time : Three Hours**

**Maximum : 100 marks**

**Answer ALL questions**

**I. Essay Questions:**

**(2 x 15 = 30)**

1. Write an essay on gastric motility. What are the factors influencing gastric emptying?
2. Give the definitions, normal values and variations of cardiac output.  
Explain the factors regulating cardiac output.

**II. Write notes on:**

**(10 x 5 = 50)**

1. Explain regulation of Acid Base balance.
2. Write a note on erythropoiesis.
3. Explain cephalic phase of gastric secretion.
4. Explain re-absorption of glucose in renal tubule.
5. What are the functions of skin?
6. Explain the changes in the body at high altitude.
7. Write a note on micturation.
8. What are the functions of saliva?
9. Enumerate the factors involved in blood coagulation.
10. Describe the various lung volumes and capacities.

**III. Short answers on:**

**(10 x 2 = 20)**

1. Define Transcytosis.
2. Define Erythrocyte sedimentation rate.
3. Describe the appendages of the skin.
4. What is Cystometrogram?
5. Explain All or none law.
6. Define plasma clearance.
7. Define edema.
8. What are T Lymphocytes?
9. Define Mastication.
10. Name the waves of normal electrocardiogram.