

AUGUST - 2005

[KN 824]

Sub. Code : 4884

B.Sc. (Nursing) DEGREE EXAMINATION.

(For Trained Nurses)

First Year — Non-Semester

Paper III — BIOCHEMISTRY AND BIOPHYSICS

Time : Three hours

Maximum : 75 marks

**Sec. A & B : Two hours and
forty five minutes**

Sec. A & B : 60 marks

Sec. C : Fifteen minutes

Sec. C : 15 marks

Answer Sections A and B in SEPARATE answer books.

Answer Section C in the answer sheet provided.

SECTION A

(BIOCHEMISTRY)

1. Define Gluconeogenesis. How Blood glucose level is maintained? Classify Diabetes Mellitus and add a note on hyper and hypoglycemia. (15)

2. Write short notes on any THREE of the following :
(3 × 5 = 15)

- (a) Enzyme profile in Myocardial infarction
- (b) Phospholipids and its functions
- (c) Lysosomes
- (d) Hyperuricemia.

SECTION B

(BIOPHYSICS)

3. Answer the following essay question : (1 × 15 = 15)
What is meant by electrocardiogram (ECG)? Describe its relevance in evaluating the function of the heart.

4. Write short notes on any THREE of the following :
(3 × 5 = 15)

- (a) Define density, relative density and specific gravity. Describe their relevance in nursing.
- (b) What is meant by friction? Discuss the various means of reducing friction.
- (c) What is meant by refraction? Describe the refraction taking place in human eye.
- (d) What is meant by atmospheric pressure? How does this vary?

[KO 824]

Sub. Code : 4884

B.Sc. (Nursing) DEGREE EXAMINATION.

(For Trained Nurses)

First Year — Non-Semester

Paper III — BIOCHEMISTRY AND BIOPHYSICS

Time : Three hours

Maximum : 75 marks

Sec. A & B : Two hours and

Sec. A & B : 60 marks

forty five minutes

Section C : Fifteen minutes

Section C : 15 marks

**Answer Sections A and B in SEPARATE
Answer books.**

Answer Section C in the answer sheet provided.

SECTION A

BIO CHEMISTRY

1. What is Ketosis? Mention two conditions associated with ketoacidosis? Write in detail about the synthesis, utilisation and catabolism of ketone bodies.

(15)

2. Short notes on any THREE:

(3 × 5 = 15)

(a) Kwashiorkor

(b) Diagnosis of diabetes mellitus

(c) Importance of protein in urine and its detection

(d) Van den-berg test.

SECTION B

BIO PHYSICS

(1 × 15 = 15)

1. Explain the basis of light and its Bio applications in medicine.

2. Short Notes on any THREE of following:

(3 × 5 = 15)

(a) Heat and sterilization.

(b) Ultrasound

(c) MRI

(d) Pace maker.

August-2006

[KP 824]

Sub. Code : 4884

SECTION B

(BIOPHYSICS)

B.Sc. (Nursing) DEGREE EXAMINATION.

(For Trained Nurses)

First Year — Non-Semester

Paper III — BIOCHEMISTRY AND BIOPHYSICS

Time : Three hours Maximum : 75 marks

Descriptive : Two hours and Descriptive : 60 marks
forty five minutes

Objective : Fifteen minutes Objective : 15 marks

Answer Sections A and B in SEPARATE

Answer books.

SECTION A

(BIOCHEMISTRY)

1. Discuss in detail the different factors affecting enzyme activity. Add a note on clinically important enzymes. (15)

2. Write short notes on any THREE of the following : (3 × 5 = 15)

- (a) Importance of biochemistry in nursing
- (b) G.T.T.
- (c) Essential amino acids
- (d) Role of liver in fat metabolism.

1. Explain Radio activity and enumerate the role of radiation in medicine. (15)

2. Write short notes on any THREE of the following : (3 × 5 = 15)

- (a) ECG & EEG
- (b) CT scan
- (c) Radiation protection
- (d) Noise pollution and prevention.

[KQ 824]

Sub. Code : 4884

B.Sc. (Nursing) DEGREE EXAMINATION.

(For Trained Nurses)

First Year — Non-Semester

Paper III — BIOCHEMISTRY AND BIOPHYSICS

Time : Three hours

Maximum : 75 marks

**Descriptive : Two hours and
forty five minutes**

Descriptive : 60 marks

Objective : Fifteen minutes

Objective : 15 marks

**Answer Sections A and B in SEPARATE
Answer books.**

SECTION A

(BIOCHEMISTRY)

1. Describe the reactions of Urea Cycle. Discuss the interrelation of urea cycle and citric acid cycle. (15)

2. Write short notes on any THREE of the following :
(3 × 5 = 15)

- (a) Lipotropic factors
- (b) Kwashiorkor
- (c) Isoenzymes
- (d) Key enzymes of gluconeogenesis.

SECTION B

(BIOPHYSICS)

1. Explain the mercury thermometer. Why mercury is used as thermometer liquid? High light about the clinical thermometer. (15)

2. Write short notes on any THREE of the following :
(3 × 5 = 15)

- (a) Describe pulleys.
 - (b) How ultrasound is used in physiotherapy?
 - (c) Explain the principle of blood cell counter.
 - (d) Differentiate between systolic and diastolic pressure.
-

AUGUST 2007

[KR 824]

Sub. Code : 4884

B.Sc. (Nursing) DEGREE EXAMINATION.

(For Trained Nurses)

First Year — Non-Semester

Paper III — BIOCHEMISTRY AND BIOPHYSICS

Time : Three hours

Maximum : 75 marks

**Descriptive : Two hours and
forty five minutes**

Descriptive : 60 marks

Objective : Fifteen minutes

Objective : 15 marks

Answer ALL questions.

SECTION A

(BIOCHEMISTRY)

I. Essay :

(1) Describe the process of glycolysis. Explain how many molecules of ATP are formed in aerobic and anaerobic glycolysis. Add a note on glycolysis in RBC.
(15)

(2) Write short notes on the following :

(3 × 5 = 15)

- (a) Enzyme profile in liver disease
- (b) Diabetic keto acidosis
- (c) Plasma proteins.

SECTION B

(BIOPHYSICS)

II. Essay :

(1) What is surface tension? What are the factors affecting surface tension. Mention the biological applications.
(15)

(2) Write short notes on the following :

(3 × 5 = 15)

- (a) Membrane transport
- (b) What is Radioactivity? What is the unit of Radioactivity? Mention the applications of radioactivity in Medicine.
- (c) Ultrafiltration.

FEBRUARY 2008

[KS 824]

Sub. Code : 4884

B.Sc. (Nursing) DEGREE EXAMINATION.

(For Trained Nurses)

First Year — Non-Semester

Paper III — BIOCHEMISTRY AND BIOPHYSICS

Q.P. Code : 684884

Time : Three hours

Maximum : 75 marks

**Descriptive : Two hours and
forty five minutes**

Descriptive : 60 marks

Objective : Fifteen minutes

Objective : 15 marks

Write Section A and B in a SEPARATE Answer Book.

Answer ALL questions.

SECTION A

(BIOCHEMISTRY)

I. Essay :

(1 × 15 = 15)

(1) What are ketone bodies? Name them.
Discuss the formation, utilisation and disposal of ketone
bodies in our system.

(2) Write short notes on the following : (3 × 5 = 15)

(a) Neoglucogenesis.

(b) Cholesterol.

(c) Importance of mitochondria.

SECTION B

(BIOPHYSICS)

II. Essay :

(1 × 15 = 15)

(1) What is the principle of Dialysis? Mention
the biological applications of dialysis. Add a note on
renal dialysis.

(2) Write short notes on :

(3 × 5 = 15)

(a) Radio immuno assay (RIA) and its
applications.

(b) Ionophores.

(c) Buffers of biological fluids in pH
regulation.

August-2008

[KT 824]

Sub. Code : 4884

B.Sc. (Nursing) DEGREE EXAMINATION.

(For Trained Nurses)

First Year – Non-Semester

Paper III — BIOCHEMISTRY AND BIOPHYSICS

Q.P. Code : 684884

Time : Three hours

Maximum : 75 marks

Write Section A and B in a SEPARATE answer book.

Answer ALL questions.

SECTION A

(BIOCHEMISTRY)

I. Essay : (1 × 15 = 15)

(1) Give a detailed account on Glycogen synthesis and degradation. Add a note on its regulation.

II. Write short notes on : (3 × 5 = 15)

(1) Factors affecting enzyme activity.

(2) Lipoproteins.

(3) Gout.

III. Short answer questions : (5 × 2 = 10)

- (1) Name the cytoplasmic filements.
- (2) What is the effect of pH on enzyme activity?
- (3) Name two enzymes elevated in liver disease.
- (4) What is the normal plasma concentration of albumin?
- (5) Name any four functions of albumin.

SECTION B

(BIOPHYSICS)

I. Essay : (1× 15 = 15)

- (1) Describe the physiology of vision and write about various types of refractory errors and its corrections.

II. Write short notes on : (2 × 5 = 10)

- (1) Advantages of using Mercury in clinical thermometer.
- (2) What is acceleration and explain Newton's second law with suitable examples.

III. Short answer questions : (5 × 2 = 10)

- (1) Explain the principle of reducing body temperature by using cold water.
- (2) Why plungers and barrels of syringes should be separated before boiling for sterilization?
- (3) Example for Third class lever in human body.
- (4) Effect of electricity in human body.
- (5) Pascals law.

B.Sc (Nursing) DEGREE EXAMINATION
(For Trained Nurses)
First Year
Non-Semester
Paper III – BIOCHEMISTRY AND BIOPHYSICS
Q.P. Code : 684884

Time : Three hours

Maximum : 75 marks

Answer All questions.

Answer Section A and B in a SEPARATE answer book.

SECTION – A
(BIOCHEMISTRY)

I. Essay: **(1 x 15 = 15)**

1. What is anaerobic glycolysis? Explain the pathway and indicate the key enzymes.

II. Write Short Notes on : **(3 x 5 =15)**

1. Ketone bodies.
2. Plasma proteins.
3. classification of enzymes.

III. Short Answer Questions: **(5 x 2 =10)**

1. Define gluconeogenesis.
2. What is the normal blood urea level? Name two conditions in which the level is elevated.
3. Give two examples of transport proteins.
4. Name the aminoacids found in glutathione.
5. Name the disaccharides.

SECTION – B
(BIOPHYSICS)

I. Essay: **(1 x 15 = 15)**

1. Discuss the various methods of ultra sound imaging.

II. Write Short Notes on : **(2 x 5 =10)**

1. Clinical thermometer.
2. Laser.

III. Short Answer Questions: **(5 x 2 =10)**

1. How do the antiseptics cause the destruction of the pathogenic bacteria?
2. What is systolic and diastolic blood pressure?
3. Refractive errors of vision.
4. Refraction and Reflection.
5. Harmful effects of ultra violet rays.

August 2009

[KV 824]

Sub. Code: 4884

B.Sc (Nursing) DEGREE EXAMINATION

(For Trained Nurses)

First Year

Non-Semester

Paper III – BIOCHEMISTRY AND BIOPHYSICS

Q.P. Code : 684884

Time : Three hours

Maximum : 75 marks

Answer All questions.

Answer Section A and B in a SEPARATE answer book.

**SECTION – A
(BIOCHEMISTRY)**

I. Essay:

(1 x 15 = 15)

1. Explain glucose tolerance test with reference to normal, mild, moderate and severe diabetic glucose tolerance test curves.

II. Write Short Notes on :

(3 x 5 =15)

1. Mechanism of enzyme action.
2. Plasma proteins and their functions.
3. Cholesterol.

III. Short Answer Questions:

(5 x 2 =10)

1. Renal glycosurea.
2. Essential fatty acids.
3. Digestive enzymes.
4. Acidosis.
5. Codons and anticodons.

**SECTION – B
(BIOPHYSICS)**

I. Essay:

(1 x 15 = 15)

1. What is Radio activity? Explain the use of radioisotopes in medicine.

II. Write Short Notes on :

(2 x 5 =10)

1. Pacemaker.
2. Sphygmomanometer.

III. Short Answer Questions:

(5 x 2 =10)

1. State Newton's second law of motion.
2. State the law of floatation.
3. What is traction?
4. What is Doppler effect?
5. Boyle's law and Charles law.

B.Sc (Nursing) DEGREE EXAMINATION

(For Trained Nurses)

First Year

Non-Semester

Paper III – BIOCHEMISTRY AND BIOPHYSICS

Q.P. Code : 684884

Time : Three hours

Maximum : 75 marks

Answer All questions.

Answer Section A and B in a SEPARATE answer book.

**SECTION – A
(BIOCHEMISTRY)**

I. Essay:

(1 x 15 = 15)

1. Define Gluconeogenesis. Write in detail the pathway and regulation of gluconeogenesis.

II. Write Short Notes on :

(3 x 5 =15)

1. Ketone bodies.
2. Plasma proteins and their functions.
3. Mitochondria.

III. Short Answer Questions:

(5 x 2 =10)

1. What is normal serum levels of sodium and potassium?
2. Name two digestive enzymes.
3. Define Glycogenolysis.
4. Write two enzymes that are elevated in jaundice.
5. What are lipo proteins? Give two examples.

**SECTION – B
(BIOPHYSICS)**

I. Essay:

(1 x 15 = 15)

1. Describe the various types of pulleys and explain the lever mechanism in the human body.

II. Write Short Notes on :

(2 x 5 =10)

1. Pulse oximeter.
2. Application of light in nursing.

III. Short Answers Questions:

(5 x 2 =10)

1. What is centrifugal force?
2. What is the use of Calorimeter?
3. What is ocular pressure?
4. What is piezo electric effect?
5. What is electrolysis?

[KX 824]

Sub. Code: 4884

**B.Sc (Nursing) DEGREE EXAMINATION
(For Trained Nurses)
First Year – Non – Semester
Paper III – BIOCHEMISTRY AND BIOPHYSICS
*Q.P. Code : 684884***

Time : Three hours

Maximum : 75 marks

Answer ALL questions.

Answer Section A and B in a SEPARATE answer book.

**SECTION A
(BIOCHEMISTRY)**

I. Essay:

(1X15=15)

1. Discuss the factors affecting Enzyme activity. Name two Enzymes that are used for therapy.

II. Write Short Notes on :

(3X 5 =15)

1. Malabsorption Syndrome of Lipids.
2. Ketone bodies and their utilisation.
3. Glucose Tolerance Test. (GTT).

III. Short Answer Questions:

(5X 2 =10)

1. Nitrogenous constituent of urine.
2. Normal serum level of cholesterol and uric acid.
3. Functions of electrolytes.
4. Define oxidative phosphorylation.
5. Write the normal values of blood glucose during fasting and postprandial state.

**SECTION B
(BIOPHYSICS)**

I. Essay:

(1X15=15)

1. Explain about basic levers and body mechanics.

II. Write Short Notes on :

(2X 5 =10)

1. Line and center of gravity of the human body.
2. Electricity and human body.

III. Short Answers Questions:

(5X 2 =10)

1. Units of length, weight, mass and time.
2. Temperature scales.
3. Arterial and venous blood pressure.
4. State the loss of electromagnetic induction.
5. What are the biological effects of radiation?

February 2011

[KY 824]

Sub. Code: 4884

B.Sc (Nursing) DEGREE EXAMINATION
(For Trained Nurses)
First Year – Non – Semester
Paper III – BIOCHEMISTRY AND BIOPHYSICS
Q.P. Code : 684884

Time : Three hours

Maximum : 75 marks

Answer ALL questions.

Answer Section A and B in a SEPARATE answer book.

SECTION A
(BIOCHEMISTRY)

I. Essay: (1X15=15)

1. Give a detailed account on regulation of blood Glucose level. How is Glucose Tolerance Test (GTT) carried out?

II. Write Short Notes on : (3X 5 =15)

1. Ketone Bodies.
2. Plasma proteins.
3. Urea cycle.

III. Short Answer Questions: (5X 2 =10)

1. Peroxisomes.
2. Extra cellular fluid.
3. Non reducing disaccharide.
4. Sulphur containing amino acids.
5. Increased enzyme Amylase.

SECTION B
(BIOPHYSICS)

I. Essay: (1X15=15)

1. Describe briefly the use of various electronic equipments in patient care.

II. Write Short Notes on : (2X 5 =10)

1. Pulleys and its types.
2. What is noise pollution? How can it be prevented?

III. Short Answers Questions: (5X 2 =10)

1. Myopia and Hypermetropia.
2. Boyle's law and Charles's law.
3. Properties of X-Ray.
4. Law of conservation of energy.
5. Types of lenses.

[KZ 824]

Sub. Code: 4884

POST BASIC BACHELOR OF SCIENCE IN NURSING DEGREE

EXAMINATION

First Year - Non Semester

(For candidates admitted from 2004-2005 onwards)

Paper III – BIOCHEMISTRY AND BIOPHYSICS

Q.P. Code : 684884

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

Answer Section A and B in a SEPARATE answer book.

SECTION A

(BIOCHEMISTRY)

I. Essay:

(1X20=20)

1. Write the Neoglucogenesis (Glucogenesis) process in detail and explain the key enzymes action on it.

II. Write Short Notes on :

(4X 5 =20)

1. Mechanism of action of enzymes.
2. Lipoproteins and their distribution.
3. When and How glucose tolerance test (GTT) is performed?
4. Plasma proteins and their functions.

III. Short Answer Questions:

(5X 2 =10)

1. What is glycemia?
2. Lysosomes.
3. Abnormal level of lipase.
4. Hyper uricemia.
5. Write the sources of potassium.

SECTION B

(BIOPHYSICS)

I. Essay:

(1X20=20)

1. Explain about basic levers and body mechanics.

II. Write Short Notes on :

(4X 5 =20)

1. Line and center of gravity of the human body.
2. Electricity and human body.
3. Acceleration and Deceleration.
4. Application of traction force in medical field.

III. Short Answers Questions:

(5X 2 =10)

1. Units of length, weight, mass and time.
2. Temperature scales.
3. Arterial and venous blood pressure.
4. State the laws of electromagnetic induction.
5. What are the biological effects of radiation?

February 2012

[LA 824]

Sub. Code: 4884

**POST BASIC BACHELOR OF SCIENCE IN NURSING DEGREE
EXAMINATION**

First Year - Non Semester

(For candidates admitted from 2004-2005 onwards)

Paper III – BIOCHEMISTRY AND BIOPHYSICS

Q.P. Code : 684884

Time : Three hours

Maximum : 75 marks

Answer ALL questions.

Answer Section A and B in a SEPARATE answer book.

**SECTION A
(BIOCHEMISTRY)**

I. Elaborate on: (1X15=15)

1. Describe the beta- oxidation of Fatty acid and its energetics.

II. Write notes on : (3X 5 =15)

1. Glycogen storage diseases.
2. Transamination.
3. Creatinine clearance.

III. Short Answer: (5X 2 =10)

1. Name the hypo and hyperglycemic hormones.
2. Essential amino acid.
3. Define Isoenzymes with two examples.
4. Hyperkalemia.
5. Name the abnormal constituents of urine.

**SECTION B
(BIOPHYSICS)**

I. Elaborate on: (1X15=15)

1. What is ultrasound? Discuss the various methods of ultrasound imaging in medicine.

II. Write notes on : (2X 5 =10)

1. Clinical thermometer.
2. Pace maker.

III. Short Answers: (5X 2 =10)

1. Differentiate between vector and scalar quantities.
2. What are the forces acting on the human body?
3. What is Astigmatism?
4. What is Electroconvulsive therapy (ECT)?
5. What is a thermo luminescent dosimeter (TLD)?

[LB 824]

AUGUST 2012

Sub. Code: 4884

FIRST YEAR P.B.B.Sc (NURSING) EXAM
Paper III – BIOCHEMISTRY AND BIOPHYSICS

Q.P. Code : 684884

Time : Three hours

Maximum : 100 marks

(180 Min) Answer ALL questions in the same order.

Answer Section A and B in a SEPARATE answer book.

SECTION A
(BIOCHEMISTRY)

I. Essay:

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

1. Explain Glycolysis and its regulation in detail.

19 33 20

II. Write Notes on:

1. Mucopolysaccharides.
2. Enzymes of diagnostic importance.
3. Rancidity.
4. Malabsorption syndrome of Lipids

3	8	5
3	8	5
3	8	5
3	8	5

III. Short Answer on:

1. Normal values of blood glucose during fasting and postprandial state.
2. Alkalosis.
3. Denaturation.
4. Serum creatinine phosphokinase.
5. Nucleotides.

1	5	2
1	5	2
1	5	2
1	5	2
1	5	2

SECTION B
(BIOPHYSICS)

I. Elaborate on:

1. What is Radio activity? Explain the use of radioisotopes in medicine.

19 33 20

II. Write Notes on:

1. Biological effects of light.
2. Relative humidity and specific heat.
3. Laser
4. Sphygmomanometer

3	8	5
3	8	5
3	8	5
3	8	5

III. Short Answers on:

1. Third order lever with example.
2. Refraction and Reflection.
3. Osmosis.
4. Pulse Oximeter.
5. Temperature Scales

1	5	2
1	5	2
1	5	2
1	5	2
1	5	2

[LC 824]

FEBRUARY 2013

Sub. Code: 4884

**POST BASIC BACHELOR OF SCIENCE IN NURSING DEGREE
EXAMINATION**

First Year - Non Semester

Paper III – BIOCHEMISTRY AND BIOPHYSICS

Q.P. Code : 684884

**Time : Three hours
(180 Min)**

Maximum : 100 marks

Answer Section A and B in a SEPARATE answer book.

**SECTION A
(BIOCHEMISTRY)**

I. Essay: (1x20=20)

1. Explain the gluconeogenesis process and add a note on Cori's cycle

II. Write Notes on: (4x5=20)

1. Mechanism of enzyme action
2. Lipoproteins
3. Transamination
4. Two liver function tests .

III. Short Answer on: (5x2=10)

1. Define reducing disaccharides
2. Function of lipids
3. What is oxidative phosphorylation
4. Atherosclerosis
5. Normal value of blood urea and blood cholesterol .

**SECTION B
(BIOPHYSICS)**

I. Essay: (1x20=20)

1. a) Newton's laws of motion with an examples for each
b) Explain the four methods of heating the tissues
c) Explain the laws of radioactivity

II. Write Notes on:**(4x5=20)**

1. Five rules and conventions in the use of symbols in SI units
2. Center of gravity and states of equilibrium with examples
3. What is a simple machine and explain the types of pulleys
4. Explain reflection and refraction with neat diagram

III. Short Answers on:**(5x2=10)**

1. Boyle's law
2. P,Q,R,S,T wave of an electrocardiogram
3. Half life of a radioactive element with an example
4. What is a pacemaker
5. Fundamental unit with an example

[LD 824]

AUGUST 2013

Sub. Code: 4884

POST BASIC BACHELOR OF SCIENCE IN NURSING DEGREE

EXAMINATION

First Year - Non Semester

Paper III – BIOCHEMISTRY AND BIOPHYSICS

Q.P. Code : 684884

Time : Three hours
(180 Min)

Maximum : 100 marks

Answer Section A and B in a SEPARATE answer book.

SECTION A

(BIOCHEMISTRY)

I. Essay

(1x20=20)

1. Write down the normal blood glucose level. Describe the hormonal regulation of Blood glucose level. Add a note on glycosuria.

II. Write Notes on:

(4x5=20)

1. Essential amino acids
2. Kidney Function tests
3. Enzymes – clinical significance
4. Elevated blood uric acid level.

III. Short Answer on:

(5x2=10)

1. Name the ketone bodies
2. Serum proteins and their normal values
3. Phospholipids
4. Name any four important abnormal constituents of urine
5. Phosphorylation

SECTION B

(BIOPHYSICS)

I. Essay:

(1x20=20)

1. Describe in detail various equipments used in intensive care unit.

II. Write Notes on:

(4x5=20)

1. Application of light in nursing.
2. Noise Pollution
3. Blood pressure measurements.
4. Radio isotopes used in medicine.

III. Short Answers on:

(5x2=10)

1. Second order of lever.
2. Normal ECG waveform.
3. Differentiate between scalar and vector quantities.
4. Biological effects of electric shock.
5. Myopia and Hypermetropia.

[LF 824]

AUGUST 2014

Sub. Code: 4884

**POST BASIC BACHELOR OF SCIENCE IN NURSING DEGREE
EXAMINATION**

First Year - Non Semester

PAPER III – BIOCHEMISTRY AND BIOPHYSICS

Q.P. Code: 684884

Time: Three Hours

Maximum: 75 marks

Answer Section A and B in a SEPARATE answer book.

**SECTION A
(BIOCHEMISTRY)**

I. Essay: (1x15=15)

1. Describe the metabolism of Krebs cycle. Explain how many ATP molecules are formed in this cycle?

II. Write Notes on: (3x5=15)

1. GTT
2. Enzymes of clinical importance
3. Lipoproteins

III. Short Answers on: (5x2=10)

1. Ribosomes
2. Phenylketonuria
3. Scurvy
4. Fluoride
5. Essential Fatty acids

**SECTION B
(BIOPHYSICS)**

I. Essay: (1x15=15)

1. Discuss the application of the principles of pressure in nursing.

II. Write Notes on: (2x5=10)

1. Sphygmomanometer.
2. Electromagnetic spectrum

III. Short Answers on: (5x2=10)

1. Equation for relationship between energy, frequency and wavelength of light
2. Application of hydrometer.
3. Simple pulleys.
4. Liquid Crystal Display (LCD)
5. Total internal reflection

[LG 824]

FEBRUARY 2015

Sub. Code: 4884

**POST BASIC BACHELOR OF SCIENCE IN NURSING DEGREE
EXAMINATION**

**FIRST YEAR - NON SEMESTER
PAPER III – BIOCHEMISTRY AND BIOPHYSICS**

Q.P. Code : 684884

Time: Three hours

Maximum : 75 marks

Answer Section A and B in a SEPARATE answer book.

**SECTION A
(BIOCHEMISTRY)**

I. Essay: (1 x 15 = 15)

1. Give a detailed account of TCA cycle. How many molecules of ATP are produced on complete oxidation of one molecule of glucose?

II. Write notes on: (3 x 5 = 15)

1. Enzyme profile in clinical diagnosis
2. Urea cycle
3. Essential amino acids

III. Short answers on: (5 x 2 = 10)

1. Endoplasmic reticulum
2. Gout
3. Normal level of urea and cholesterol in serum
4. Night blindness
5. Wilson's disease

**SECTION B
(BIOPHYSICS)**

I. Essay: (1 x 15 = 15)

1. Give an essay on the physiology of hearing.

II. Write notes on: (2 x 5 = 10)

1. Law of conservation of energy
2. Instruments used for detecting ionizing radiation

III. Short answers on: (5 x 2 = 10)

1. Derived units
2. Law of floatation
3. Inclined plane
4. Ocular pressure
5. Hypermetropia

POST BASIC BACHELOR OF SCIENCE IN NURSING

DEGREE EXAMINATION

FIRST YEAR – NON SEMESTER

PAPER III – BIOCHEMISTRY AND BIOPHYSICS

Q.P. Code: 684884

Time : Three Hours

Maximum : 75 marks

Answer ALL questions

Answer Section A and B in a SEPARATE answer book.

SECTION A

(BIOCHEMISTRY)

I. Essay: (1 x 15 = 15)

1. Describe the metabolism of glycolysis, its energetics and regulation.

II. Write notes on: (3 x 5 = 15)

1. Importance of vitamins.
2. Urea cycle.
3. Metabolic Acidosis.

III. Short answers on: (5 x 2 = 10)

1. Name any four Trace Elements.
2. Name any two Special proteins.
3. Albinism.
4. Name the types of Jaundice.
5. Golgi complex.

**SECTION B
(BIOPHYSICS)**

I. Essay: (1 x 15 = 15)

1. a) Explain the four methods of heating the tissues.
b) Explain the first law of Newton with an example.

II. Write notes on: (2 x 5 = 10)

1. States of Equilibrium with examples.
2. Explain Total internal reflection and the application in medicine.

III. Short answers on: (5 x 2 = 10)

1. Buoyant force.
2. Dalton's law.
3. Law of conservation of energy.
4. What is the difference between Mass and Weight?
5. Give two names of radioisotopes used in Brachytherapy.

POST BASIC BACHELOR OF SCIENCE IN NURSING

DEGREE EXAMINATION

FIRST YEAR - NON SEMESTER

PAPER III – BIOCHEMISTRY AND BIOPHYSICS

Q.P. Code: 684884

Time : Three Hours

Maximum : 75 Marks

Answer Section A and B in a SEPARATE answer book.

SECTION A

(BIOCHEMISTRY)

I. Essay: (1 x 15 = 15)

1. Write in detail about Glycogen storage diseases.

II. Write notes on: (3 x 5 = 15)

1. Ribosome
2. Plasma Proteins
3. TCA cycle

III. Short answers on: (5 x 2 = 10)

1. Vitamin C.
2. Difference between DNA & RNA (any two).
3. Give any two Sulphur containing Aminoacids.
4. Biological importance of Lipids.
5. Normal value of Blood, Calcium and Phosphorus.

SECTION B

(BIOPHYSICS)

I. Essay: (1 x 15 = 15)

1. Describe the Human Visual physiology and write different types of refractory errors and its types of correctiveness.

II. Write notes on: (2 x 5 = 10)

1. What is Friction, how to reduce frictional losses?
2. Explain the Clinical Thermometer.

III. Short answers on: (5 x 2 = 10)

1. Defibrillator.
2. What is Reflection?
3. State the Law of Floatation.
4. Write notes on Electro Cardio Gram (ECG).
5. What is Specific Gravity?

[LJ 824]

AUGUST 2016

Sub. Code: 4884

**POST BASIC BACHELOR OF SCIENCE IN NURSING DEGREE EXAMINATION
FIRST YEAR - NON SEMESTER
PAPER III – BIOCHEMISTRY AND BIOPHYSICS**

Q.P. Code : 684884

Time : Three hours

Maximum : 75 Marks

Answer Section A and B in a SEPARATE answer book.

**SECTION A
(BIOCHEMISTRY)**

I. Elaborate on : (1 x 15 = 15)

1. Describe the reactions of Urea cycle. Discuss the interrelation of Urea cycle and TCA cycle.

II. Write notes on: (3 x 5 = 15)

1. GTT.
2. Clinical importance of enzymes.
3. Kwashiorkor & Marasmus.

III. Short answers on: (5 x 2 = 10)

1. Differences between inulin and insulin (any two).
2. Glycosuria.
3. Semi essential amino acid.
4. Induced fit model of enzyme activity.
5. Write any two functions of albumin.

**SECTION B
(BIOPHYSICS)**

I. Elaborate on : (1 x 15 = 15)

1. Explain the basis of light and its bio-applications in medicine.

II. Write notes on: (2 x 5 = 10)

1. CT scan.
2. Radiation protection.

III. Short answers on: (5 x 2 = 10)

1. State Boyle's law and Charles's law.
2. What is the use of calorimeter?
3. Explain arterial and venous blood pressure.
4. What is astigmatism?
5. Define Osmosis.

[LK 824]

FEBRUARY 2017

Sub. Code: 4884

**POST BASIC BACHELOR OF SCIENCE IN NURSING DEGREE EXAMINATION
FIRST YEAR - NON SEMESTER
PAPER III – BIOCHEMISTRY AND BIOPHYSICS**

Q.P. Code : 684884

Time : Three hours

Maximum : 75 Marks

Answer Section A and B in a SEPARATE answer book.

**SECTION A
(BIOCHEMISTRY)**

I. Elaborate on: (1 x 15 = 15)

1. Explain in detail about glucose tolerance test with curve.

II. Write notes on: (3 x 5 = 15)

1. Alkaptonuria.
2. Factors affecting enzyme activity.
3. Lipoproteins.

III. Short answers on: (5 x 2 = 10)

1. Mitochondria.
2. Name the bile acids.
3. Define glycolysis.
4. Name the electrolytes and their normal values.
5. Name any two liver function tests.

**SECTION B
(BIOPHYSICS)**

I. Elaborate on: (1 x 15 = 15)

1. What is lever? Describe the types of levers with examples. Explain about body mechanics.

II. Write notes on: (2 x 5 = 10)

1. Aneroid Barometer.
2. Why mercury is used as thermometric liquid?

III. Short answers on: (5 x 2 = 10)

1. Units of work, power, and energy.
2. State the Newton's III law of motion.
3. Define change of state.
4. What is laser?
5. What is rectifier?

[LL 824]

AUGUST 2017

Sub. Code: 4884

**POST BASIC BACHELOR OF SCIENCE IN NURSING
DEGREE EXAMINATION
FIRST YEAR - NON SEMESTER
PAPER III – BIOCHEMISTRY AND BIOPHYSICS**

Q.P. Code : 684884

Time : Three hours

Maximum : 75 Marks

Answer Section A and B in a SEPARATE answer book.

**SECTION A
(BIOCHEMISTRY)**

I. Elaborate on: (1 x 15 = 15)

1. Describe the β oxidation of fatty acids and its energetics.

II. Write notes on: (3 x 5 = 15)

1. Glycogen storage disease.
2. Isoenzymes.
3. Creatinine clearance.

III. Short answers on: (5 x 2 = 10)

1. Essential amino acids.
2. Define glycogenolysis.
3. Name the ketone bodies.
4. Name any two products derived from cholesterol.
5. Name the plasma proteins.

**SECTION B
(BIOPHYSICS)**

I. Elaborate on: (1 x 15 = 15)

1. Explain the human eye and visual defects.

II. Write notes on: (2 x 5 = 10)

1. What is noise pollution? How can it be prevented?
2. Pulse oximeter.

III. Short answers on: (5 x 2 = 10)

1. What is Doppler effect?
2. What are temperature scales?
3. What is ECT?
4. What is ocular pressure?
5. Types of lenses.

[LM 824]

FEBRUARY 2018

Sub. Code: 4884

**POST BASIC BACHELOR OF SCIENCE IN NURSING
DEGREE EXAMINATION
FIRST YEAR - NON SEMESTER
PAPER III – BIOCHEMISTRY AND BIOPHYSICS**

Q.P. Code : 684884

Time : Three hours

Maximum : 75 Marks

Answer Section A and B in a SEPARATE answer book.

**SECTION A
(BIOCHEMISTRY)**

I. Elaborate on: (1 x 15 = 15)

1. Explain the biosynthesis of proteins in the cells.

II. Write notes on: (3 x 5 = 15)

1. Mechanism of enzyme action.
2. Explain the glycogenolysis process.
3. Write notes on cholesterol biosynthesis.

III. Short answers on: (5 x 2 = 10)

1. Hyperglycemia.
2. Essential amino acids.
3. Normal level of urea and cholesterol in blood.
4. Phenyl ketonuria.
5. Nucleus.

**SECTION B
(BIOPHYSICS)**

I. Elaborate on: (1 x 15 = 15)

1. What is radio activity? Explain the use of radio isotopes in medicine.

II. Write notes on: (2 x 5 = 10)

1. Sphygmomanometer.
2. States of equilibrium with examples.

III. Short answers on: (5 x 2 = 10)

1. Types of lenses.
2. Refraction and reflection.
3. Differentiate between vector and scalar quantities.
4. Biological effects of electric shock.
5. Acceleration.

**POST BASIC BACHELOR OF SCIENCE IN NURSING
DEGREE EXAMINATION**

FIRST YEAR – NON SEMESTER

PAPER III – BIOCHEMISTRY AND BIOPHYSICS

Q.P. Code : 684884

Time : Three Hours

Maximum : 75 Marks

Answer Section A and B in a SEPARATE answer book.

**SECTION - A
(BIOCHEMISTRY)**

I. Elaborate on: (1 x 15 = 15)

1. Explain the process of Gluconeogenesis.

II. Write notes on: (3 x 5 = 15)

1. Write a brief note on Gout.
2. Role of liver in fat metabolism.
3. Explain oxidative phosphorylation.

III. Short answers on: (5 x 2 = 10)

1. Name some of the electrolytes and their sources.
2. Lock and key model.
3. Name any two of the plasma proteins and their functions.
4. Write some factors affecting the absorption of carbohydrates.
5. Ketone bodies.

**SECTION - B
(BIOPHYSICS)**

I. Elaborate on: (1 x 15 = 15)

1. Describe briefly the use of various electronic equipments in patient care.

II. Write notes on: (2 x 5 = 10)

1. Instruments used for detecting ionizing radiation.
2. What is radioactivity? Give the names of two isotopes and their applications in medicine.

III. Short answers on: (5 x 2 = 10)

1. Myopia and Hyper-metropia.
2. Law of conservation of energy.
3. Temperature scales.
4. Noise pollution.
5. Half-life of a radio-active element with an example.

**POST BASIC BACHELOR OF SCIENCE IN NURSING
DEGREE EXAMINATION**

FIRST YEAR – NON SEMESTER

PAPER III – BIOCHEMISTRY AND BIOPHYSICS

Q.P. Code: 684884

Time : Three Hours

Maximum : 75 Marks

Answer Section A and B in a SEPARATE answer book.

**SECTION - A
(BIOCHEMISTRY)**

I. Elaborate on: (1 x 15 = 15)

1. What is Ketosis? Write in detail about the Synthesis, Utilisation and Disposal of Ketonebodies.

II. Write notes on: (3 x 5 = 15)

1. Phospholipids and its functions.
2. Phenylketonuria.
3. Glycogenesis.

III. Short answers on: (5 x 2 = 10)

1. PUFA.
2. Two examples for basic amino acids.
3. Normal value of Serum total protein and albumin.
4. Two Enzymes analyzed for Liver function.
5. Lysosomes.

**SECTION - B
(BIOPHYSICS)**

I. Elaborate on: (1 x 15 = 15)

1. What is sterilization? Explain the methods of sterilization.

II. Write notes on: (2 x 5 = 10)

1. What are the principles followed when lifting and moving a patient?
2. Radioactive pollution and health.

III. Short answers on: (5 x 2 = 10)

1. Ohm's law.
2. What is noise?
3. What are the ways of minimizing friction?
4. Luminous bodies.
5. Osmotic pressure.

**POST BASIC BACHELOR OF SCIENCE IN NURSING
DEGREE EXAMINATION**

FIRST YEAR – NON SEMESTER

PAPER III – BIOCHEMISTRY AND BIOPHYSICS

Q.P. Code: 684884

Time : Three Hours

Maximum : 75 Marks

Answer Section A and B in a SEPARATE answer book.

**SECTION - A
(BIOCHEMISTRY)**

I. Elaborate on: (1 x 15 = 15)

1. Describe the β -oxidation of fatty acids. Mention the Energetics and its deficiency.

II. Write notes on: (3 x 5 = 15)

1. Transamination and Deamination.
2. Glycogen storage diseases.
3. Cardiac related enzymes.

III. Short answers on: (5 x 2 = 10)

1. Translation.
2. Cytosol and cytoskeleton.
3. Normal levels of AST and ALT.
4. Homo-polysaccharides.
5. Normal cholesterol levels in blood.

**SECTION - B
(BIOPHYSICS)**

I. Elaborate on: (1 x 15 = 15)

1. Describe the various types of pulleys and explain the lever mechanism in the human body.

II. Write notes on: (2 x 5 = 10)

1. Explain different theories to explain the nature of light.
2. Pace-maker.

III. Short answers on: (5 x 2 = 10)

1. What are the differences between mass and weight?
2. Relative density.
3. Astigmatism.
4. State Fleming left hand rule.
5. What is Echo?

**POST BASIC BACHELOR OF SCIENCE IN NURSING
DEGREE EXAMINATION**

FIRST YEAR – NON SEMESTER

PAPER III – BIOCHEMISTRY AND BIOPHYSICS

Q.P. Code: 684884

Time : Three Hours

Maximum : 75 Marks

Answer Section A and B in a SEPARATE answer book.

**SECTION - A
(BIOCHEMISTRY)**

I. Elaborate on: (1 x 15 = 15)

1. Discuss the factors affecting enzyme action. Add a note on enzymes associated with cardiac and liver function.

II. Write notes on: (3 x 5 = 15)

1. Mucopolysaccharides.
2. Plasma proteins and its function.
3. Mitochondria.

III. Short answers on: (5 x 2 = 10)

1. Define gluconeogenesis.
2. Alkalosis.
3. Oxidative phosphorylation.
4. Flurosis.
5. Name the essential fatty acids.

**SECTION - B
(BIOPHYSICS)**

I. Elaborate on: (1 x 15 = 15)

1. What are X- rays? List the properties and uses of X- rays in various fields.

II. Write notes on: (2 x 5 = 10)

1. Write the clinical application of gravity.
2. List the applications of light in human body.

III. Short answers on: (5 x 2 = 10)

1. Mass.
2. Channels of heat loss in human body.
3. Hydro-static pressure.
4. Audible sound.
5. Effects of electricity on human body.

**POST BASIC BACHELOR OF SCIENCE IN NURSING
DEGREE EXAMINATION**

FIRST YEAR – NON SEMESTER

PAPER III – BIOCHEMISTRY AND BIOPHYSICS

Q.P. Code: 684884

Time : Three Hours

Maximum : 75 Marks

Answer Section A and B in a SEPARATE answer book.

**SECTION - A
(BIOCHEMISTRY)**

I. Elaborate on: (1 x 15 = 15)

1. Give a detailed account on regulation of blood glucose level. Add a note on glycosuria.

II. Write notes on: (3 x 5 = 15)

1. Gout disease.
2. Essential aminoacid.
3. Rancidity.

III. Short answers on: (5 x 2 = 10)

1. Creatinine clearance.
2. Hypercholesterolemia.
3. Normal level of urea and uric acid.
4. Metabolic acidosis.
5. Give two examples for Isoenzymes.

**SECTION - B
(BIOPHYSICS)**

I. Elaborate on: (1 x 15 = 15)

1. What is meant by ECG? Describe its relevance in evaluating the function of the heart.

II. Write notes on: (2 x 5 = 10)

1. Difference between light waves and sound waves.
2. Pace maker.

III. Short answers on: (5 x 2 = 10)

1. Body mechanics.
2. Convert 98.6°F into celsius.
3. Presbyopia.
4. Pascal's Law.
5. Derived units.

[PBBSCN 0921]

**SEPTEMBER 2021
(FEBRUARY 2021 SESSION)**

Sub. Code: 4884

**POST BASIC BACHELOR OF SCIENCE IN NURSING
DEGREE EXAMINATION**

FIRST YEAR – NON SEMESTER

PAPER III – BIOCHEMISTRY AND BIOPHYSICS

Q.P. Code: 684884

Time : Three Hours

Maximum : 75 Marks

Answer Section A and B in a SEPARATE answer book.

**SECTION - A
(BIOCHEMISTRY)**

I. Elaborate on: (1 x 15 = 15)

1. Glycogen metabolism in detail.

II. Write notes on: (3 x 5 = 15)

1. Essential fatty acids with example.
2. Phospholipids.
3. Cori cycle.

III. Short answers on: (5 x 2 = 10)

1. Plasma proteins.
2. Lipotropic factors.
3. Hyperglycemia.
4. Clinically important enzymes.
5. Ribosomes.

**SECTION - B
(BIOPHYSICS)**

I. Elaborate on: (1 x 15 = 15)

1. Write a note on ECG, EEG, EMG, ECT.

II. Write notes on: (2 x 5 = 10)

1. Explain the structure of an atom.
2. Explain doppler effect.

III. Short answers on: (5 x 2 = 10)

1. State Boyle's law and Charle's law.
2. Computed tomographic scanning (CT Scan).
3. Explain heat capacity.
4. What is specific gravity?
5. Equation for relationship between energy, frequency and wavelength of light.

THE TAMIL NADU DR.M.G.R. MEDICAL UNIVERSITY

[PBBSCN 0322]

**MARCH 2022
(For August 2021 Session Examination)**

Sub. Code: 4884

**POST BASIC BACHELOR OF SCIENCE IN NURSING
DEGREE EXAMINATION**

(Regulations for candidates admitted from 2010-2011 Session onwards)

FIRST YEAR (Regular)

PAPER III – BIOCHEMISTRY AND BIOPHYSICS

Q.P. Code: 684884

Time : Three Hours

Maximum : 75 Marks

Answer Section A and B in a SEPARATE answer book.

**SECTION - A
(BIOCHEMISTRY)**

I. Elaborate on: (1 x 15 = 15)

1. Explain the urea cycle process in detail.

II. Write notes on: (3 x 5 = 15)

1. Glucose Tolerance Test
2. Factors affecting enzyme activity
3. Hypercholesterolemia.

III. Short answers on: (5 x 2 = 10)

1. Ribosomes.
2. Diabetes mellitus
3. Write the normal levels of amylase & lipase.
4. Classification of Proteins.
5. Hyperkalemia

**SECTION - B
(BIOPHYSICS)**

I. Elaborate on: (1 x 15 = 15)

1. Explain the mercury thermometer. Why mercury is used as thermometer liquid? Highlight about the clinical thermometer.

II. Write notes on: (2 x 5 = 10)

1. Write rules and conventions in the uses of symbols in SI units.
2. Explain: Electrocardiography (ECG).

III. Short answers on: (5 x 2 = 10)

1. Linear momentum
2. State: Pascal's law
3. Relative humidity
4. Power of a lens
5. Diathermy.

THE TAMIL NADU DR.M.G.R. MEDICAL UNIVERSITY

[PBBSCN 0722]

JULY 2022

Sub. Code: 4884

(FEBRUARY 2022 SESSION)

**POST BASIC BACHELOR OF SCIENCE IN NURSING
DEGREE EXAMINATION**

(Regulations for candidates admitted from 2010-2011 Session onwards)

FIRST YEAR

PAPER III – BIOCHEMISTRY AND BIOPHYSICS

Q.P. Code: 684884

Time : Three Hours

Maximum : 75 Marks

Answer Section A and B in a SEPARATE answer book.

**SECTION - A
(BIOCHEMISTRY)**

I. Elaborate on: (1 x 15 = 15)

1. Describe the metabolism of glycolysis with its energetics and regulation.

II. Write notes on: (3 x 5 = 15)

1. Classification of Carbohydrates.
2. Clinical importance of Enzymes.
3. Essential Amino acids with example.

III. Short answers on: (5 x 2 = 10)

1. Importance of Biochemistry in Nursing.
2. Metabolic Acidosis.
3. Kwashiorkor and Marasmus.
4. Pancreatic related Enzymes.
5. Normal value of calcium and Phosphorus in Blood.

**SECTION - B
(BIOPHYSICS)**

I. Elaborate on: (1 x 15 = 15)

1. Explain the methods of heat transfer and how does the body regulate the temperature with the significance of metabolic rate.

II. Write notes on: (2 x 5 = 10)

1. Explain the working of MRI scan.
2. Explain Lever and its types.

III. Short answers on: (5 x 2 = 10)

1. Derived units.
2. Define center of Gravity.
3. Explain biological effects of light.
4. Explain ultra sound and its uses.
5. What is Isotopes and Isobars?

THE TAMIL NADU DR.M.G.R. MEDICAL UNIVERSITY

[PBBSCN 1122]

NOVEMBER 2022

Sub. Code: 4884

(AUGUST 2022 EXAM SESSION)

**POST BASIC BACHELOR OF SCIENCE IN NURSING
DEGREE EXAMINATION**

(Regulations for candidates admitted from 2010-2011 Session onwards)

FIRST YEAR

PAPER III – BIOCHEMISTRY AND BIOPHYSICS

Q.P. Code: 684884

Time : Three Hours

Maximum : 75 Marks

Answer Section A and B in a SEPARATE answer book.

**SECTION - A
(BIOCHEMISTRY)**

I. Elaborate on: (1 x 15 = 15)

1. Explain in detail about TCA cycle, its energetics and its amphibolic nature.

II. Write notes on: (3 x 5 = 15)

1. Lipoproteins.
2. Glycogenolysis.
3. Factors influencing enzyme action.

III. Short answers on: (5 x 2 = 10)

1. Mitochondria.
2. Hyper-cholesterolemia.
3. Normal values of serum electrolytes.
4. Hartnup's disease.
5. Clinical picture of hemolytic jaundice.

**SECTION - B
(BIOPHYSICS)**

I. Elaborate on: (1 x 15 = 15)

1. What is ultra-sound? Discuss the various methods of ultra-sound imaging in medicine.

II. Write notes on: (2 x 5 = 10)

1. What are the properties of Alpha (α), Beta (β) and Gamma (γ) particles?
2. Electro Encephalography (EEG).

III. Short answers on: (5 x 2 = 10)

1. Define inertia.
2. Basal Metabolic Rate.
3. State Coulomb's law.
4. Convection.
5. What is electromagnetic induction?

THE TAMIL NADU DR.M.G.R. MEDICAL UNIVERSITY

[PBBSCN 0523]

MAY 2023

Sub. Code: 4884

(FEBRUARY 2023 EXAM SESSION)

**POST BASIC BACHELOR OF SCIENCE IN NURSING
DEGREE EXAMINATION**

(Regulations for candidates admitted from 2010-2011 Session onwards)

FIRST YEAR

PAPER III – BIOCHEMISTRY AND BIOPHYSICS

Q.P. Code: 684884

Time : Three Hours

Maximum : 75 Marks

Answer Section A and B in a SEPARATE answer book.

**SECTION - A
(BIOCHEMISTRY)**

I. Elaborate on: (1 x 15 = 15)

1. Explain the process of Protein synthesis in the Cells.

II. Write notes on: (3 x 5 = 15)

1. Write a brief note on Gout.
2. Write a note on Protein malnutrition.
3. Cori cycle and its importance.

III. Short answers on: (5 x 2 = 10)

1. Write the normal values of Serum electrolytes.
2. Define Essential Fatty Acids.
3. Ketoacidosis.
4. Phenylketonuria.
5. Acidosis.

**SECTION - B
(BIOPHYSICS)**

I. Elaborate on: (1 x 15 = 15)

1. Describe the various types of pulleys and explain the lever mechanism in the Human body.

II. Write notes on: (2 x 5 = 10)

1. Line and centre of Gravity of the Human body.
2. Pace maker.

III. Short answers on: (5 x 2 = 10)

1. Different Temperature scales.
2. Application of light in Nursing.
3. Pascals law.
4. What are the biological effects of Radiation?
5. What is a Thermo Luminescent Dosimeter (TLD)?

THE TAMIL NADU DR.M.G.R. MEDICAL UNIVERSITY

[PBBSCN 1123]

**NOVEMBER 2023
(AUGUST 2023 EXAM SESSION)**

Sub. Code: 4884

**POST BASIC BACHELOR OF SCIENCE IN NURSING
DEGREE EXAMINATION**

(Regulations for candidates admitted from 2010-2011 Session onwards)

FIRST YEAR

PAPER III – BIOCHEMISTRY AND BIOPHYSICS

Q.P. Code: 684884

Time : Three Hours

Maximum : 75 Marks

Answer Section A and B in a SEPARATE answer book.

**SECTION - A
(BIOCHEMISTRY)**

I. Elaborate on: (1 x 15 = 15)

1. Explain the process of TCA cycle and regulation. How many molecules of ATP are produced during the complete oxidation of Glucose?

II. Write notes on: (3 x 5 = 15)

1. Lactose intolerance.
2. Explain the mechanism of Enzyme activity.
3. Write any two Renal Function tests.

III. Short answers on: (5 x 2 = 10)

1. Marasmus.
2. Importance of HMP shunt.
3. Any two products of Cholesterol.
4. Write normal value of Serum proteins.
5. Mitochondria and Lysosome.

**SECTION - B
(BIOPHYSICS)**

I. Elaborate on: (1 x 15 = 15)

1. What is Radio Activity? Explain the use of Radioisotopes in medicine.

II. Write notes on: (2 x 5 = 10)

1. Electricity and Human body.
2. Sphygmomanometer.

III. Short answers on: (5 x 2 = 10)

1. Acceleration and Deceleration.
2. Fundamental unit with an example.
3. Myopia and Hypermetropia.
4. What is Surface tension? Give Units.
5. Uses of Ultrasound.

THE TAMIL NADU DR.M.G.R. MEDICAL UNIVERSITY

[PBBSCN 0224]

FEBRUARY 2024

Sub. Code: 4884

**POST BASIC BACHELOR OF SCIENCE IN NURSING
DEGREE EXAMINATION**

(Regulations for candidates admitted from 2010-2011 Session onwards)

FIRST YEAR

PAPER III – BIOCHEMISTRY AND BIOPHYSICS

Q.P. Code: 684884

Time : Three Hours

Maximum : 75 Marks

Answer Section A and B in a SEPARATE answer book.

**SECTION - A
(BIOCHEMISTRY)**

I. Elaborate on: (1 x 15 = 15)

1. Draw a Eukaryotic cell and label its parts and explain briefly.

II. Write notes on: (3 x 5 = 15)

1. Define Glycolysis – add a note on its energetics.
2. Explain Metabolic alkalosis and its compensatory mechanism.
3. Explain the Urea cycle and write its significance.

III. Short answers on: (5 x 2 = 10)

1. What is meant by Glycosuria?
2. Define Osmosis and Diffusion.
3. Classify Diabetes mellitus.
4. Hypokalemia.
5. Name the enzymes of clinical importance in Myocardial infarction.

**SECTION - B
(BIOPHYSICS)**

I. Elaborate on: (1 x 15 = 15)

1. What are X-rays? List the properties and uses of X-rays in various fields.

II. Write notes on: (2 x 5 = 10)

1. What is Noise pollution? How it will be prevented?
2. Explain the use of heat for Sterilization.

III. Short answers on: (5 x 2 = 10)

1. What are the differences between Mass and Weight?
2. Law of conservation of energy.
3. What are the ways of minimizing friction?
4. Myopia and Hyper-metropia.
5. What is ocular pressure?

THE TAMIL NADU DR.M.G.R. MEDICAL UNIVERSITY

[PBBSCN 0824]

AUGUST 2024

Sub. Code: 4884

**POST BASIC BACHELOR OF SCIENCE IN NURSING
DEGREE EXAMINATION**

(Regulations for candidates admitted from 2010-2011 Session onwards)

FIRST YEAR

PAPER III – BIOCHEMISTRY AND BIOPHYSICS

Q.P. Code: 684884

Time : Three Hours

Answer ALL Questions

Maximum : 75 Marks

Answer Section A and B in a SEPARATE answer book.

**SECTION - A
(BIOCHEMISTRY)**

I. Elaborate on: (1 x 15 = 15)

1. Define Glycolysis. Give the aerobic phase of glycolysis with energetics and regulation.

II. Write notes on: (3 x 5 = 15)

1. Plasma proteins.
2. Golgi apparatus.
3. Elaborate on various factors affecting enzyme activity.

III. Short answers on: (5 x 2 = 10)

1. Neoglucogenesis.
2. Name any four liver function enzymes.
3. Steatorrhea.
4. Hypokalemia.
5. Glycosuria.

**SECTION - B
(BIOPHYSICS)**

I. Elaborate on: (1 x 15 = 15)

1. Explain Briefly about the
 - a) CT Scan
 - b) ECG and its applications.

II. Write notes on: (2 x 5 = 10)

1. Write about the Gravitational forces.
2. Explain the principle of blood cell counter.

III. Short answers on: (5 x 2 = 10)

1. Define Wavelength.
2. What is Sterilization.
3. Uses of Transformer.
4. Difference between sound and Ultrasound.
5. Define Atmospheric pressure.

POST BASIC BACHELOR OF SCIENCE IN NURSING
DEGREE EXAMINATIONS
(Regulations for candidates admitted from 2010-2011 Session onwards)

FIRST YEAR

PAPER III – BIOCHEMISTRY AND BIOPHYSICS

Q.P. Code: 684884

Time : Three Hours

Answer ALL Questions

Maximum : 75 Marks

Answer Section A and B in a SEPARATE answer book.

SECTION - A
(BIOCHEMISTRY)

I. Elaborate on: (1 x 15 = 15)

1. What is the normal fasting, post prandial and random blood glucose level. Add in detail about regulation of blood glucose.

II. Write notes on: (3 x 5 = 15)

1. Liver Function Test.
2. Plasma lipoproteins.
3. Mal absorption syndrome.

III. Short answers on: (5 x 2 = 10)

1. Name two serum electrolytes and give their normal level.
2. Essential Amino Acids.
3. Kwashiorkor.
4. Hypercholesterolemia.
5. Suicidal bags.

SECTION - B
(BIOPHYSICS)

I. Elaborate on: (1 x 15 = 15)

1. Explain about the Light and Laws of Reflection. What is the Relationship between Energy and Frequency of light.

II. Write notes on: (2 x 5 = 10)

1. Explain the Clinical Thermometer.
2. Explain about the Ultrasound applications in Nursing.

III. Short answers on: (5 x 2 = 10)

1. What is heat?
2. Define Ohm's law.
3. Write the principle of X-rays.
4. State Flemings right hand rule.
5. Write about the Film Badge.

THE TAMIL NADU Dr. M.G.R. MEDICAL UNIVERSITY

[PBBSCN 1125]

**NOVEMBER 2025
(AUGUST 2025 EXAM SESSION)**

Sub. Code: 4884

POST BASIC B.Sc. NURSING DEGREE COURSE EXAMINATION

(Regulations for candidates admitted from 2010-2011 sessions onwards)

FIRST YEAR

PAPER III – BIOCHEMISTRY & BIOPHYSICS

Q.P. Code: 684884

Time : Three Hours

Answer ALL Questions

Maximum : 75 Marks

Answer Section A and B in a SEPARATE answer book

**SECTION - A
(BIOCHEMISTRY)**

I. Elaborate on: (1 x 15 = 15)

1. Explain in detail the diagnostic applications of enzymes. Give at least five disease conditions with examples.

II. Write notes on: (3 x 5 = 15)

1. Detoxification of ammonia in liver and its significance.
2. Role of insulin on blood glucose regulation.
3. Digestion and absorption of proteins.

III. Short answers on: (5 x 2 = 10)

1. Functions of Mitochondria.
2. Common causes of Ketosis.
3. Substrate level phosphorylation and its importance.
4. What is Hyponatremia? Mention any two causes.
5. Examples of non-protein nitrogenous substances present in blood.

**SECTION - B
(BIOPHYSICS)**

I. Elaborate on: (1 x 15 = 15)

1. What is sterilization? Explain various methods of sterilization used in medicine.

II. Write notes on: (2 x 5 = 10)

1. Give reasons for using mercury as a liquid in thermometer.
2. Advantages and disadvantages of MRI in medicine.

III. Short answers on: (5 x 2 = 10)

1. Autoclaving.
2. Traction.
3. Define magnification.
4. What is ocular pressure?
5. Radiation safety.
