



61303

First P.B. B.Sc. Nursing Examination, May/June 2011
BIOCHEMISTRY AND BIOPHYSICS

Total Duration : Section A + B + C = 3 Hours

Section B & C Marks : 60

SECTION – B & SECTION – C

- Instructions :*
- 1) *All questions are compulsory.*
 - 2) *The number to the right indicates full marks.*
 - 3) *Draw diagrams wherever necessary.*
 - 4) *Do not write anything on the blank portion of the question paper. If written anything, such type of act will be considered as an attempt to resort to unfair means.*



SECTION – B
Biochemistry

2. Answer the following (**any three** out of five) : (3×5=15)

- a) Note on three diagnostic enzymes.
- b) Plasma proteins and their functions
- c) Fatty liver
- d) Characteristic features and treatment of dehydration
- e) Urea cycle.

3. Long answer question : (1×7=7)

Mention normal range of fasting blood glucose.

Mention Renal threshold for glucose. Explain hormonal regulation of blood glucose.

4. Long answer question : (1×8=8)

Name ketone bodies

Explain term ketosis.

Explain the formation and utilisation of ketone bodies

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SECTION – C
Biophysics

5. Answer the following (**any three** out of five) : (3×5=15)
- a) Principles and applications of electronics in Nursing.
 - b) Noise pollution and its prevention.
 - c) Application of principles of gravity in nursing.
 - d) Define lever and describe its different types.
 - e) Principle and clinical applications of Magnetic Resonance Imaging (MRI).
6. Long answer question : (1×7=7)
Explain the regulation of body temperature in detail.
7. Long answer question : (1×8=8)
Explain electro cardio graph (E.C.G.) in detail and its significance.
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First P.B. B.Sc. Nursing Examination, Summer 2012
BIOCHEMISTRY AND BIOPHYSICS

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Section B & C Marks: 60

SECTION – B & SECTION – C

- Instructions:** 1) *All questions are compulsory.*
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SECTION – B
Biochemistry

2. Answer the following (**any three** out of five) : **(3×5=15)**
- a) Distribution of electrolytes and their function.
 - b) Glucose Tolerance Test.
 - c) Structure of DNA.
 - d) Steps and energetic of Kreb's cycle.
 - e) Specific Dynamic Action.
3. Digestion and absorption of carbohydrates, proteins and lipids. **(1×7=7)**
4. Explain the formation of uric acid and add a note on gout. **(1×8=8)**

SECTION – C
Biophysics

5. Answer the following (**any three** out of five) : **(3×5=15)**
- a) Differential speed and velocity.
 - b) State the law of conservation of energy.
 - c) Hydrostatic pressure.
 - d) Newton's second law of motion with example.
 - e) Measurements of pressures in the body.
6. Explain the effects of gravity on human body. **(1×7=7)**
7. Explain in detail about electronic equipments used in patient care. **(1×8=8)**



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First P.B. B.Sc. Nursing Examination, Summer 2013
BIOCHEMISTRY AND BIOPHYSICS

Total Duration : Section A + B + C = 3 Hours

Section B & C Marks : 60

SECTION – B & SECTION – C

Instructions: 1) **All questions are compulsory.**

2) The number to the **right** indicates **full** marks.

3) **Draw** diagrams wherever **necessary**.

4) **Do not write anything on the blank portion of the question paper.** If written anything, such type of act will be considered as an attempt to resort to unfair means.

SECTION – B
Biochemistry

2. Answer the following (any 3 out of 5) :

(3×5=15)

- Plasma proteins and their functions
- Significance of HMP shunt
- Factors affecting enzyme activity
- Gout
- RNA

3. Long answer question

(1×7=7)

Describe Ketone body formation and its utilization.

4. Long answer question

(1×8=8)

How blood glucose level is regulated ? Give normal values of fasting and post-meal blood glucose.

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SECTION – C

Biophysics

5. Answer the following (**any three** out of five)

(3×5=15)

- a) What is force ? Explain Russell traction with the help of diagram.
- b) Explain Pascal Law. Give its clinical importance.
- c) Write in detail first and second class lever with examples.
- d) Describe gravity. Write its application for nurses.
- e) Hydrostatic Pressure.

LAQ

(1×7=7)

6. Define Motion. Write three different Neuton's law of motion with suitable examples.

LAQ

(1×8=8)

7. Explain in detail about electronic equipments used in patient care.



First P.B.B.SC. NURSING, Winter 2014
Biochemistry and Biophysics

Total Duration: Section A+B = 3 Hours

Total Marks : 75

Instructions:

- 1) Use blue/black ball point pen only.
- 2) Do not write anything on the blank portion of the question paper. If written anything, such type of act will be considered as an attempt to resort to unfair means.
- 3) All questions are compulsory.
- 4) The number to the right indicates full marks.
- 5) Draw diagrams wherever necessary.
- 6) Distribution of syllabus in Question Paper is only meant to cover entire syllabus within the stipulated frame. The Question paper pattern is a mere guideline. Questions can be asked from any paper's syllabus into any question paper. Students cannot claim that the Question is out of syllabus. As it is only for the placement sake, the distribution has been done.
- 7) Use a common answer book for all section.

Section-A (45 marks)

Biochemistry

1. Short answer questions (any five out of six) :

(5x5=25)

- a) Water balance and dehydration.
- b) Digestion of lipids.
- c) Name essential Amino acids and sulphur containing amino acids.
- d) Gout.
- e) Glycolysis.
- f) Electron Transport Chain.

2. Long answer question (any two out of three) :

(2x5=10)

- a) Describe various steps of Glycogenolysis.
- b) Describe the classification of enzymes.
- c) Describe beta-oxidation of Fatty acids.

3. Short answer question (any two out of three) :

(2x5=10)

- a) Balanced Diet.
- b) Urea Cycle.
- c) Cholesterol synthesis.

P.T.O.

Biophysics

4. Short answer questions (any four out of five) :**(4x5=20)**

- a) Explain the clinical thermometer.
- b) State the laws of refraction
- c) Write a short note on electronic cardiac pacemaker.
- d) Describe the process of vocalization.
- e) State Newtons third law of motion . Explain with one example.

5. Long answer question (any one out of two) :**(1x10=10)**

- a) Give the clinical applications of gravity.
- b) Which are the methods of heating the tissues ? Give example of each.



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First P.B.B.Sc. Nursing Examination, Summer 2015
BIOCHEMISTRY AND BIOPHYSICS

Total Duration : Section A+B = 3 Hours

Total Marks : 75

SECTION – A & SECTION – B

- Instructions :**
- 1) Use **blue/black** ball point pen only.
 - 2) Do not write anything on the **blank portion of the question paper**. If written anything, such type of act will be considered as an attempt to resort to unfair means.
 - 3) **All** questions are **compulsory**.
 - 4) The number to the **right** indicates **full** marks.
 - 5) Draw diagrams **wherever** necessary.
 - 6) Distribution of syllabus in Question Paper is only meant to cover entire syllabus within the stipulated frame. The Question paper pattern is a mere guideline. Questions can be asked from any paper's syllabus into any question paper. Students cannot claim that the Question is out of syllabus. As it is only for the placement sake, the distribution has been done.
 - 7) **Use** a common answer book for **all** Sections.

SECTION – A

(45 marks)

Biochemistry

1. Short answer questions (**any five** out of six) : **(5x5=25)**
 - a) Dehydration.
 - b) Biomedical importance of lipids.
 - c) Conjugated proteins.
 - d) Draw well labelled diagram of Urea cycle with enzymes taking parts.
 - e) Enumerate mucopolysaccharides with their functions.
 - f) Basal metabolic rate (BMR).

2. Long answer question (**any two** out of three) : **(2x5=10)**
 - a) Define Enzymes. Enumerate factors affecting enzyme action.
 - b) What is Gout ? Mention its causes and treatment.
 - c) Factors regulating blood sugar level.

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3. Short answer question (**any two** out of three) : (2x5=10)
- a) Nitrogen balance.
 - b) Importance of Tricarboxylic acid cycle.
 - c) Enumerate Ketone bodies & mention causes of Ketosis.

SECTION – B

(30 marks)

Biophysics

4. Short answer questions (**any four** out of five) : (4x5=20)
- a) Explain laws of reflection.
 - b) Enumerate the hazards of radiation.
 - c) Explain use of bath blankets in bed bath.
 - d) State Pascal's law and write any two applications of it.
 - e) Explain the effect of heat on matter.
5. Long answer question (**any one** out of two) : (1x10=10)
- a) Describe optical system of eye.
 - b) Discuss application of electromagnetism in nursing.
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First P.B. B.Sc. Nursing Examination, Summer 2016
BIOCHEMISTRY AND BIOPHYSICS

Total Duration: Section A+B = 3 Hours

Total Marks : 75

- Instructions :**
- 1) Use **blue/black** ball point pen only.
 - 2) Do not write anything on the **blank portion of the question paper**. If written anything, such type of act will be considered as an attempt to resort to unfair means.
 - 3) **All questions are compulsory.**
 - 4) The number to the **right** indicates **full marks**.
 - 5) Draw diagrams **wherever** necessary.
 - 6) Distribution of syllabus in Question Paper is only meant to cover entire syllabus within the stipulated frame. The Question paper pattern is a mere guideline. Questions can be asked from any paper's syllabus into any question paper. Students cannot claim that the Question is out of syllabus. As it is only for the placement sake, the distribution has been done.
 - 7) **Use a common answerbook for all sections.**

SECTION – A
(Biochemistry)

(45 marks)

1. Short answer questions (**any five** out of six) : (5×5=25)
 - a) Define and classify lipids with suitable examples.
 - b) Diagnostically important enzymes.
 - c) Describe the pathway of glycolysis and add a note on its energetics.
 - d) Describe Urea cycle. Write down significance of serum urea.
 - e) Electron transport chain.
 - f) Biological functions of proteins.

2. Long answer question (**any two** out of three) : (2×5=10)
 - a) Describe initiation, elongation and termination process of biosynthesis of proteins.
 - b) Explain in detail Beta-oxidation of fatty acid (palmitic acid) with its energetics.
 - c) Describe the various factors affecting enzyme action.



3. Short answer question (**any two** out of three) : (2×5=10)
- a) Define gluconeogenesis and glycogenesis.
 - b) Digestion and absorption of lipids.
 - c) Functions of calcium and phosphorous.

SECTION – B
(Biophysics)

(30 marks)

4. Short answer questions (**any four** out of five) : (4×5=20)
- a). State the laws of refraction. What is refractive index ?
 - b) Explain short wave diathermy.
 - c) Explain the effects of heat on human body.
 - d) How ultrasound is used in physiotherapy ?
 - e) Describe a pulse oximeter.
5. Long answer question (**any one** out of two) : (1×10=10)
- a) Describe the therapeutic uses of electricity in nursing.
 - b) What are the types of forces acting on body ? Mention SI unit of force. Discuss the application of force in human body.
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First P.B.B.Sc. NURSING Examination, Summer 2017
BIOCHEMISTRY AND BIOPHYSICS

Total Duration : Section A + B = 3 Hours

Total Marks : 75

SECTION – A & SECTION – B

- Instructions :**
- 1) Use **blue/black** ball point pen only.
 - 2) **Do not** write anything on the **blank portion of the question paper**. If written anything, such type of act will be considered as an attempt to resort to unfair means.
 - 3) **All** questions are **compulsory**.
 - 4) The number to the **right** indicates **full** marks.
 - 5) Draw diagrams **wherever** necessary.
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 - 7) **Use** a common answerbook for **all** Sections.

SECTION – A (45 Marks)
(Biochemistry)

1. Short answer questions (any five out of six) : (5×5=25)
 - a) Define enzymes. Enumerate factors affecting enzyme activity.
 - b) Give outline and importance of Tricarboxylic acid cycle (Kreb's cycle).
 - c) Phospholipids of biological importance.
 - d) What are the causes and consequences of Dehydration ?
 - e) Classify carbohydrates with suitable examples.
 - f) Structure and function of t-RNA.
2. Long answer question (any two out of three) : (2×5=10)
 - a) Electron transport chain and its inhibitors.
 - b) What is ketosis? Write down the causes of ketosis and about detection of ketosis.
 - c) Explain in detail urea cycle with its significance and energetics.

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3. Short answer question (**any two** out of three) :

(2×5=10)

- a) Functional classification of proteins.
- b) Atherosclerosis.
- c) Gluconeogenesis.

SECTION – B (30 marks)
(Biophysics)

4. Short answer questions (**any four** out of five) :

(4×5=20)

- a) What are the modes of heat transfer ? Explain with one example.
- b) What is osmotic pressure ? Enumerate its uses in human body.
- c) Explain principle of wax bath.
- d) Why synthetic cloth dresses are not allowed in operation theaters ?
- e) Explain the defibrillator.

5. Long answer question (**any one** out of two) :

(1×10=10)

- a) Discuss lever systems of body.
 - b) Explain the biological effects of light. Describe uses of light in therapy.
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**First P.B. B.Sc. Nursing Examination, Winter 2017
BIOCHEMISTRY AND BIOPHYSICS**

Total Duration : Section A + B = 3 Hours

Total Marks : 75

SECTION – A & SECTION – B

- Instructions :**
- 1) Use **blue/black** ball point pen only.
 - 2) Do not write anything on the **blank portion of the question paper**. If written anything, such type of act will be considered as an attempt to resort to unfair means.
 - 3) **All** questions are **compulsory**.
 - 4) The number to the **right** indicates **full** marks.
 - 5) Draw diagrams **wherever** necessary.
 - 6) Distribution of syllabus in Question Paper is only meant to cover entire syllabus within the stipulated frame. The Question paper pattern is a mere guideline. Questions can be asked from any paper's syllabus into any question paper. Students cannot claim that the Question is out of syllabus. As it is only for the placement sake, the distribution has been done.
 - 7) **Use** a common answerbook for **all** Sections.

SECTION – A (45 Marks)

(Biochemistry)

1. Short answer question (**any five** out of six) : **(5×5=25)**
 - 4 a) Plasma proteins and their functions.
 - 3 b) Electrolyte distribution, its functions and imbalance in body.
 - 4 c) Classify carbohydrates with suitable examples.
 - d) Fatty Liver – its causes and prevention.
 - e) Structure and functions of DNA.
 - 4 f) Structure and functions of cell membrane.
2. Long answer question (**any two** out of three) : **(2×5=10)**
 - 4 a) Define Enzymes. Describe various factors affecting Enzyme activity.
 - b) Describe Ketone body formation and their utilization in the body. Add a note on ketosis.
 - 3 c) Describe various steps of Krebs cycle. Add a note on its energetics.

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3. Short answer question (**any two** out of three) :

(2×5=10)

- a) Balanced Diet.
- b) Uric acid formation.
- c) Glycogenesis.

SECTION – B (30 Marks)

(Biophysics)

4. Short answer question (**any four** out of five) :

(4×5=20)

- 1 a) Explain Newton's third law of motion.
- 2 b) Write in brief on uses of light in therapy.
- 3 c) Enumerate the effect of linear acceleration on human body.
- 4 d) Ventilator.
- 5 e) Uses of heat sterilization.

5. Long answer question (**any one** out of two) :

(1×10=10)

- 1 a) Describe in detail various Lever mechanisms in body.
 - 2 b) Define electromagnetism. Describe its application in medical science.
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First P.B.B.Sc. Nursing Examination, Summer 2018
BIOCHEMISTRY AND BIOPHYSICS

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Total Marks : 75

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 - 7) **Use** a common answerbook for **all** Sections.

SECTION – A (45 Marks)
(Biochemistry)

1. Short answer questions (**any five** out of six) : **(5×5=25)**
 - a) Write any five important functions of lipid.
 - b) Write a note on structure of DNA.
 - c) What is fatty liver ? Write the causes of fatty liver.
 - d) What is dehydration ? Write the causes of dehydration.
 - e) Write a note on Balanced Diet.
 - f) Write about any four factors affecting enzyme action.

2. Long answer question (**any two** out of three) : **(2×5=10)**
 - a) Draw the structure of cell. Mention five cell organelles with their function.
 - b) Explain Gout.
 - c) What are ketone bodies? What are the causes of metabolic ketoacidosis?

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3. Short answer question (**any two** out of three) : **(2×5=10)**
- a) Define conjugated proteins. Name any three conjugated proteins with one function of each.
 - b) What are essential amino acids? Name essential amino acids.
 - c) Mention names and functions of any four Homopolysaccharides.

SECTION – B (30 Marks)
(Biophysics)

4. Short answer questions (**any four** out of five) : **(4×5=20)**
- a) Write in brief about radiation hazards.
 - b) Write a note on ultrasound.
 - c) Write a note on diffusion.
 - d) Write in brief on ~~viscosity~~ *velocity*.
 - e) Applications of surface tension.
5. Long answer question (**any one** out of two) : **(1×10=10)**
- a) Write in detail about mechanisms of heat transfer and applications of heat transfer in body.
 - b) What does Pascal's Law state ? Write in detail about applications of Pascal's law in body and in nursing.
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First P.B.B.Sc. Nursing Examination, Winter 2018
BIOCHEMISTRY AND BIOPHYSICS

Total Duration : Section A + B = 3 Hours

Total Marks : 75

SECTION – A & SECTION – B

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- 1) Use **blue/black** ball point pen only.
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 - 3) **All questions are compulsory.**
 - 4) The number to the **right** indicates **full marks**.
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 - 7) Use a common answerbook for **all sections**.

SECTION – A (45 Marks)
(Biochemistry)

1. Short answer question (**any five** out of six) : **(5×5=25)**
 - a) Digestion of Proteins.
 - b) Classification of Carbohydrates with suitable examples.
 - c) Types and functions of Lipoproteins.
 - d) Structure and functions of Mitochondria.
 - e) Balanced diet.
 - f) Glucose Tolerance test.

2. Long answer question (**any two** out of three) : **(2×5=10)**
 - a) Describe various steps of TCA cycle.
 - b) Describe the role of enzymes in clinical diagnosis.
 - c) Describe the steps of Krebs cycle.

3. Short answer question (**any two** out of three) : **(2×5=10)**
 - a) Water and Electrolyte balance.
 - b) Essential amino acids.
 - c) Fatty liver.

P.T.O.



SECTION – B (30 Marks)
(Biophysics)

4. Short answer question (**any four** out of five) : **(4×5=20)**
- a) List the basic units of mass and weight in SI system. Why does an object weigh more at sea level than that on a high mountain ?
 - b) Explain the types of motion. Give its applications in nursing.
 - c) What is center of gravity ? Explain the importance of principles of gravity in health care practices.
 - d) Why does a patient lying in bed for a long time develop sores? State the law that explains it.
 - e) Barium sulfate is used to outline organs. Explain.
5. Long answer question (**any one** out of two) : **(1×10=10)**
- a) What are types of Electricity? Human body is a good conductor of electricity. Discuss.
 - b) Explain the significance of Pascal's law of hydrostatic pressure in day to day life as well as in health care.
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**First P.B.B.Sc. Nursing Examination, Summer (Phase - II) 2019
BIOCHEMISTRY AND BIOPHYSICS**

Total Duration : 3 Hours

Total Marks : 75

- Instructions :**
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 - 3) **All questions are compulsory.**
 - 4) The number to the **right** indicates **full marks**.
 - 5) Draw diagrams **wherever** necessary.
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 - 7) Use a common answer book for all sections.

**SECTION - A (45 Marks)
(Biochemistry)**

1. Short answer questions (**any five** out of six) : **[5 × 5 = 25]**
 - a) Explain in detail about Electron Transport Chain.
 - b) State Importance of Water Balance.
 - c) Functions of Plasma Proteins.
 - d) Types and Functions of RNA.
 - e) Explain Balanced Diet and its importance.
 - f) Uric acid formation.

2. Long answer questions (**any two** out of three): **[2 × 5 = 10]**
 - a) Describe beta oxidation of Fatty acids.
 - b) Describe factors affecting Enzyme activity.
 - c) Describe steps of Gluconeogenesis.

3. Short answer question (**any two** out of three) : **[2 × 5 = 10]**
- a) Describe regulation of blood sugar levels.
 - b) Explain in detail about digestion of Fats.
 - c) Glucose Tolerance tests (GTT).

SECTION - B (30 Marks)

(Biophysics)

4. Short answer questions (**any four** out of five) : **[4 × 5 = 20]**
- a) Define Torque and describe in brief its applications.
 - b) Explain the eye as a lens.
 - c) Define gravity and write principles of gravity.
 - d) What is magnetic induction? Write about applications of magnet.
 - e) With the help of a diagram, describe a Thermometer.
5. Long answer questions (**any one** out of two) : **[1 × 10 = 10]**
- a) Explain in brief how measurement of bioelectricity is useful in diagnosis and treatment.
 - b) Compare diffusion and osmosis. What is osmotic pressure and what are its applications?

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**First P.B. B.Sc. Nursing Examination, Winter (Phase - III All
Other Remaining UG/PG Course) - 2019
BIOCHEMISTRY AND BIOPHYSICS**

Total Duration : Section A + B = 3 Hours

Total Marks : 75

SECTION - A & SECTION - B

- Instructions :**
- 1) Use **blue/black** ball point pen only.
 - 2) **Do not** write anything on the **blank portion of the question paper**. If written anything, such type of act will be considered as an attempt to resort to unfair means.
 - 3) **All** questions are **compulsory**.
 - 4) The number to the **right** indicates **full** marks.
 - 5) Draw diagrams **wherever** necessary.
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 - 7) Use a common answerbook for all sections.

SECTION - "A" (45 Marks)

Biochemistry

1. Short answer questions (any five out of six) : [5 × 5 = 25]
- a) Explain structure and function of mitochondria.
 - b) Discuss importance of biochemistry for nursing.
 - c) Define ketosis. Mention two conditions causing ketosis.
 - d) Essential amino acids.
 - e) Role of liver in fat metabolism- fatty liver.
 - f) Diagnostic significance of enzymes. :

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2. Long answer questions (any two out of three) : [2 × 5 = 10]
- Outline the pathway of glycolysis.
 - Lipoproteins and its functions.
 - When and how glucose tolerance test is performed?
3. Short answer questions (any two out of three) : [2 × 5 = 10]
- Explain difference between DNA and RNA.
 - Discuss important physiological functions of potassium. List the sign and symptoms of hyperkalemia.
 - Biologically important polypeptides.

SECTION - "B" (30 Marks)
Biophysics

4. Short answer questions (any four out of five) : [4 × 5 = 20]
- Explain the units of length, weight, mass, time and velocity.
 - Application of lever, pulley traction in Nursing.
 - Explain different types of fluid motion.
 - Write the differences between Electricity and Electromagnetism.
 - Write the biological effects of light.
5. Long answer question (any one out of two) : [1 × 10 = 10]
- Discuss the effect of heat on matter and write its application in nursing practice.
 - Define hydrostatic pressure. Describe in detail the principles and the methods of measurement of arterial and venous pressure.

