POST BASIC BACHELOR OF SCIENCE (NURSING)
F. Y. P. B. B. Sc. (Nursing) :SUMMER : 2023
SUBJECT : BIOCHEMISTRY & BIOPHYSICS

Day : Monday | Time : 10:00 AM-01:00 PM

Date : 3/7/2023 | **S-5658-2023** | Max. Marks : 75

N.B.:

1) All questions are **COMPULSORY**.
2) Figures to the right indicate **FULL** marks.
3) Draw neat and labeled diagram **WHEREVER** necessary.
4) Answers to both the sections should be written in **SEPARATE** answer books.

SECTION – I

Q.1 Write short answers on **ANY FIVE** of the following: **[10]**

a) What are the end products of aerobic and anaerobic glycolysis?
b) Enumerate the ketone bodies and their use.
c) What is the diagnostic importance of Serum Amylase?
d) Define disaccharides. Give examples of disaccharides.
e) Give two major functions of Na^+.
f) Enumerate the different transport mechanisms across the cell membrane.

Q.2 Write short notes on **ANY FOUR** of the following: **[16]**

a) Different tests included in lipid profile with their normal ranges
b) Conditions of hypercholesterolemia with its preventive measures
c) Dehydration
d) Factors affecting enzyme activity
e) Structure and function of mitochondria
f) Homopolysaccharides

Q.3 Long answer questions **(ANY ONE)**: **[12]**

a) What are nitrogenons constituents of urine? Describe urea cycle in detail with its clinical importance.

b) What is G.T.T.? Describe the procedure and normal, abnormal GTT, with its causes.

SECTION – II

Q.4 Write short answers on **ANY FIVE** of the following: **[10]**

a) State law of conservation of momentum.
b) What is Doppler effect?
c) Differentiate between scalar and vector quantity.
d) State joules law of heating.
e) Define light.
f) Write use of radioisotopes in medicine.
g) What is hydrostatic paradox?

Q.5 Write short answers on **ANY FIVE** of the following: **[16]**

a) Write short note on ECG and EEG.
b) State three Newtons laws of motion.
c) Explain construction working and use of mercury thermometer.
d) Explain pitch loudness and quality of musical note.
e) State Boyle's law and Charles law.
f) Describe the working of incline plane as machine.

Q.6 Long answer questions **(ANY ONE)**: **[11]**

a) With a neat diagram explain human eye in detail. Explain different visual defects of eye with their correction.

b) Describe construction and working of sphygmomanometer. Discuss the application of pressure in nursing.

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POST BASIC BACHELOR OF SCIENCE (NURSING)
F. Y. P. B. B. Sc. (Nursing) :SUMMER- 2022
SUBJECT : BIOCHEMISTRY & BIOPHYSICS

Day : Monday
Date : 6/6/2022

S-5658-2022

Time : 10:00 AM-01:00 PM
Max. Marks : 75

N.B.

1) All questions are **COMPULSORY.**
2) Figures to the right indicate **FULL** marks.
3) Answers to both the sections should be written in **SEPARATE** answer book.

SECTION – I

Q.1 Write short answers on any **FIVE** of the following: **(5X2=10)**

a) Which cellular organelle is called as suicidal bag? Why?
b) What is polysaccharide? Give any two examples.
c) What is cell-membrane? Give any two function of it.
d) Give functions of lipid (any two)
e) What is the normal range of blood glucose in fasting and PP condition?
f) What are the types of RNA? Give its function?
g) Name the enzymes used for diagnosis of liver disease.

Q.2 Write short notes on any **FOUR** of the following: **(4X4=16)**

a) Regulation of electrolyte level in the body.
b) Plasma proteins-types with functions.
c) Describe different laboratory tests for diagnosis of Diabetes Mellitus.
d) Hypercholesterolemia-causes, manifestation, prevention and treatment.
e) Enlist hormones with functions.
f) Blood urea and clinical significance.

Q.3 Attempt any **ONE** of the following: **(12)**

a) Describe the pathway of glycolysis with its energetics.

OR

b) What are enzymes? Outline their classification with suitable examples. Add a note on factors affecting enzymatic activity.

SECTION – II

Q.4 Write short answers on any **FIVE** of the following: **(5X2=10)**

a) Explain self-induction and mutual induction.
b) Explain chemical effect of electric current.
c) Describe osmotic pressure.
d) State law of reflection of refraction.
e) What is scalar and vector quantity give its example.
f) Explain fundamental units and derived units with example.
g) Explain regulation of body temperature.

Q.5 Write short notes on any **FOUR** of the following: **(4X4=16)**

a) Explain ocular pressure.
b) What is ultrasound? Explain production of ultrasound.
c) What is an electric shock? What are its effects on human body?
d) Explain biological effects of radiation.
e) Describe pacemakers.
f) Explain effect of heat on liquid and gases.

Q.6 Attempt any **ONE** of the following: **(1x11=11)**

a) Explain with neat diagram a human eye and its visual defects with their correction.

OR

b) Explain radiation measuring device.

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F. Y. P. B. B. Sc. (Nursing): SUMMER – 2021
SUBJECT : BIOCHEMISTRY & BIOPHYSICS

Day : Wednesday
Date : 02-06-2021 S.2021-5658
Time : 10:00 AM TO 1:00 P.M.
Max. Marks : 75

N.B.:

1) All questions are **COMPULSORY**.
2) Figures to the right indicate **FULL** marks.
3) Draw neat and labeled diagram **WHEREVER** necessary.
4) Answers to both the sections should be written in **SEPARATE** answer book.

SECTION – I

Q.1 Attempt **ANY FIVE** of the following: **[10]**

a) Which cellular organelle is called as 'Suicidal Bag'? Why?
b) What are the routes of water excretion from the body?
c) Enlist the hormones of pituitary gland.
d) What is essential fatty acid? Give its example.
e) What is homopolysaccharides? Give any two examples with function.
f) State the biological importance of protein.
g) What is Gout?

Q.2 Attempt **ANY FOUR** of the following: **[16]**

a) Immunoglobulins.
b) What is diabetes mellitus? Give different laboratory tests used for diagnosis of diabetes mellitus.
c) Describe regulation of electrolytes with disorder.
d) What is cell-membrane? Describe the fluid mosaic model of cell-membrane.
e) What is TCA Cycle? Give the significance of TCA Cycle.
f) Name the ketone bodies. Describe ketosis with its causes.

Q.3 Attempt **ANY ONE** of the following: **[12]**

a) Define lipid. Give the classification and functions of lipid. Add a note on hypercholesterolemia.
b) Define and classify enzymes with suitable examples. Describe diagnostic and therapeutic role of enzymes.

SECTION – II

Q.4 Attempt **ANY FIVE** of the following: **[10]**

a) State the law of conservation of momentum.
b) Differentiate between kinetic energy and potential energy.
c) What is specific heat?
d) What is hypermetropia? How it can be corrected?
e) Explain different types of fluid motion.
f) What is the difference between a musical sound and noise?
g) What is forward and reverse biasing of pn-junction diode?

Q.5 Attempt **ANY FOUR** of the following: **[16]**

a) What is accuracy and error in measurement? State different types of errors.
b) Describe the working of incline plane as machine.
c) Explain vocalization and hearing of sound.
d) Describe the digital thermometer.
e) What is radioactivity? Explain the use of radioisotopes in medicine.
f) State Boyle's law and Charles law, deduce ideal gas equation.

Q.6 Attempt **ANY ONE** of the following: **[11]**

a) State the Newton's law of gravitation. Explain the application of gravity in nursing.
b) State Faraday's law of electrolysis. Explain in detail ECG and C.T. Scan with its principle.

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F. Y. P. B. B. Sc. (Nursing): SUMMER – 2020
SUBJECT : BIOCHEMISTRY & BIOPHYSICS

Day : Monday
Date : 07-12-2020 S-2020-5658

Time : 9:00AM-TO 12:00NOON.
Max. Marks : 75

N.B.:

1) All questions are **COMPULSORY**.
2) Figures to the right indicate **FULL** marks.
3) Draw neat and labeled diagram **WHEREVER** necessary.
4) Answers to both the sections should be written in **SEPARATE** answer book.

SECTION – I

Q.1 Attempt **ANY FIVE** of the following: **[10]**

a) What is cell membrane? Give its function.
b) Enlist the electrolytes. Give the functions of any two of it.
c) Give the diagnostic importance of serum amylase.
d) Give the biomedical importance of lipid.
e) What is mean by disaccharide? Give its example with function.
f) Enlist lipoproteins with function.
g) State the importance of DNA and RNA.

Q.2 Attempt **ANY FOUR** of the following: **[16]**

a) What are ketone bodies? Write note on ketosis.
b) Describe the different tests of lipid profile.
c) What is enzyme activity? Describe the different factors affecting enzyme activity.
d) Describe the disorders of water and electrolyte imbalance.
e) Describe the structure and function of mitochondria with diagram.
f) What is the normal range of Sr. Cholesterol? Describe the causes of hypercholesterolemia.

Q.3 Attempt **ANY ONE** of the following: **[12]**

a) What are proteins? Classify it with functions. Add a note on plasma proteins.
b) What is the normal blood glucose level in fasting condition? How blood sugar level is regulated in the body? Add a note on hyperglycemia.

SECTION – II

Q.4 Attempt **ANY FIVE** of the following: **[10]**

a) Explain centripetal and centrifugal force.
b) State different scale of measurement of temperature, explain absolute scale of temperature.
c) What is ocular pressure?
d) State the laws of electromagnetic induction.
e) What is friction, explain advantages and losses of friction.
f) Explain the biological effect of radiation.
g) Describe the space-maker.

Q.5 Attempt **ANY FOUR** of the following: **[16]**

a) What is centre of gravity, state different types of equilibrium?
b) State and explain hydrostatic paradox in detail.
c) Define the S.I. unit of length, mass and time.
d) Write a short note on ECG.
e) Explain short wave diathermy and wax bath in detail.
f) What is isotopes, isotones and isomes, give its examples?

Q.6 Attempt **ANY ONE** of the following: **[11]**

a) With neat diagram explain human eye in detail, explain different visual defect of eye with their correction.
b) Explain with neat diagram vocalization and hearing of sound. Explain pitch, loudness and quality of musical note.

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F. Y. P. B. B. SC. (NURSING) : SUMMER - 2019
SUBJECT : BIOCHEMISTRY AND BIOPHYSICS

Day : Monday
Date : 22/04/2019

S-2019-4360

Time : 10.00 A.M. TO 01.00 P.M.
Max. Marks : 75

N. B. :

1) All questions are **COMPULSORY**.
2) Figures to the right indicate **FULL** marks.
3) Answers to both the sections should be written in **SEPARATE** answer books.

SECTION – I

Q. 1 Write short notes on **ANY FIVE** of the following: **(10)**

a) What is lysosome? Give its functions.

b) Enlist the factors affecting enzymes activity.

c) Give the diagnostic importance of serum alkaline phosphatase.

d) Enlist the hormones of pituitary gland.

e) What is hypothyroidism? Give its types.

f) What is normal range of blood sugar in random, fasting & postprandial state?

g) Name the ketone bodies.

Q. 2 Short answer questions **ANY FOUR** of the following: **(16)**

a) What is lipoprotein? Describe its types.

b) Describe digestion & absorption of carbohydrate.

c) Describe regulation of water & electrolyte balance.

d) Describe Krebs cycle

e) Enlist the thyroid hormones. Give its functions.

f) Enlist plasma proteins. Give its functions.

Q. 3 Long answer questions **ANY ONE** of the following: **(12)**

a) What is beta oxidation? Describe the process of beta oxidation. Mention number of ATPs formed by oxidation of palmitic acid by beta oxidation.

b) Describe & classify enzymes with suitable examples. Describe the diagnostic application of enzymes.

P. T. O.

SECTION – II

Q. 4 Write short notes on **ANY FIVE** of the following: **(10)**

a) What is Doppler effect?

b) Difference between mass number & atomic number.

c) Give the uses of semiconductor diode. Explain one of them in detail.

d) What is specific gravity? Gives the density of blood & bone

e) State the law of conservation of momentum.

f) State the biological effect of light.

g) Explain the physiological effect of heat.

Q. 5 Short Answer Questions **ANY FOUR** of the following: **(16)**

a) Define the unit of length, mass & time with examples.

b) What is equilibrium & explain the various types of equilibrium.

c) Explain construction working & uses of mercury thermometer.

d) What is myopia? How it can be corrected.

e) Describe sphygmomanometer.

f) Explain the uses of radioisotopes in medicine.

Q. 6 Long Answer Questions **ANY ONE** of the following: **(11)**

a) What is self induction & mutual induction? Describe the CT scan with principle.

b) State the law of conservation of energy. Derive an expression for kinetic & potential energy. Write advantages & disadvantages of friction

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F.Y.P.B.B.Sc Nursing : Summer- 2018

SUBJECT: BIOCHEMISTRY AND BIOPHYSICS

Day: Monday
Date: 23-04-2018 S-2018-3893

Time: —
Max. Marks: 15

N.B:

1) All questions are **COMPULSORY.**
2) Put a ☑ tick mark in the appropriate box.
3) Use **BLUE/ BLCK** pen only.
4) Section one should be completed in **15** minutes.
5) Each question carries **ONE** mark.
6) Students will be allotted marks if he/ she overwrite strikes or puts white ink on the cross once marked.

Seat No.: _____ **Total Marks Obtained** _____

Jr. Signature_____ **Examiners Signature**_____

SECTION-I
(BIOCHEMISTRY)

Q.1 MCQ:

Q.1 Ribosomes present on which of the following cell organelle?

- **a)** Endoplasmic reticulum ☐
- **b)** Golgi apparatus ☐
- **c)** Mitochondria ☐
- **d)** Peroxisomes ☐

Q.2 Over hydration means

- **a)** Water retention ☐
- **b)** Water loss ☐
- **c)** Electrolyte retention ☐
- **d)** None of these ☐

Q.3 Which of the following is called as animal starch?

- **a)** Galactose ☐
- **b)** Glucose ☐
- **c)** Glycogen ☐
- **d)** Cellulose ☐

Q.4 Sugar found in milk is

- **a)** Mannose ☐
- **b)** Maltose ☐
- **c)** Fructose ☐
- **d)** Lactose ☐

P.T.O.

Q.5 Lipid is stored in adipose tissue in the form of

a) Cholesterol ☐

b) Phospholipid ☐

c) Fatty acids ☐

d) Triglycerides ☐

Q.6 One of the following enzyme useful in diagnosis of prostate cancer is

a) Transaminase ☐

b) Lipase ☐

c) Acid phosphatase ☐

d) Alkaline Phosphatase ☐

Q.7 Uric acid level increases in _____.

a) Jaundice ☐

b) Diabetes mellitus ☐

c) Diabetes insipidus ☐

d) Gout ☐

Q.8 Gama Glutamyl transpeptidase (GGT) activity in serum is elevated in

a) Pancreatitis ☐

b) Muscular dystrophy ☐

c) Myocardial infarction ☐

d) Alcoholism ☐

(BIOPHYSICS)

Q.9 That which possesses mass and occupies space is called _____.

a) Matter ☐

b) Energy ☐

c) Heat ☐

d) Semiconductor ☐

Q.10 The bones movement in the human body is a _____.

a) Linear ☐

b) Oscillatory ☐

c) Translator ☐

d) Rotatory ☐

...2

Q.11 In which region of retina the vision is most acute?

a) Vitreous humor ☐

b) Conjunctive ☐

c) Ciliary body ☐

d) Fovea centralize ☐

Q.12 As tissue temperature decreases the metabolism_____.

a) Increases ☐

b) Decreases ☐

c) Remains same ☐

d) First increases and then decreases ☐

Q.13 A semiconductor device which convert AC into DC is called_____.

a) Rectifier ☐

b) Oscillator ☐

c) Amplifier ☐

d) Transformer ☐

Q.14 One horse power is equal to _____.

a) 746 watt ☐

b) 9.8 watt ☐

c) 760 watt ☐

d) 1000 watt ☐

Q.15 Laws of electromagnetic induction were given by _____.

a) Fleming ☐

b) Faraday ☐

c) Lenz ☐

d) Ohm ☐

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F.Y.P.B.B.Sc Nursing : Summer- 2018

SUBJECT: BIOCHEMISTRY AND BIOPHYSICS

Day: Monday Time: 10.00A.M.To 1.00 P.M.

Date: 23.04.2018 Max. Marks: 60

S.2018-3893

N.B:

1) All questions are **COMPULSORY**.
2) Figures to the right indicate **FULL** marks.
3) Answers to both the sections should be written in **SEPARATE** answer book.

SECTION-II
(BIOCHEMISTRY)

Q.2 Write short notes on (**ANY THREE**) : **(15)**

a) Fatty liver
b) Glucose Tolerance Test
c) Plasma proteins and their functions
d) Describe the structure and function of mitochondria

Q.3 Long Question on (**ANY ONE**): **(15)**

a) Define and classify enzymes. Describe factors affecting enzyme activity.

b) Describe urea cycle and write a note on Uremia.

SECTION-III
(BIOPHYSICS)

Q.4 Write short notes on (**ANY THREE**) : **(15)**

a) Explain the use of radioisotopes in medicine
b) Write a short notes on ECG
c) State the laws of reflection
d) What is scalar and vector, state its examples

Q.5 Long Question on (**ANY ONE**): **(15)**

a) Explain with neat diagram Vocalization and hearing of sound. Write characteristics of musical sound.

b) Describe construction and working of sphygmomanometer? Discuss the application of pressure in nursing.

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(47)

RAJMACH - I: APRIL/MAY- 2018
SUBJECT: BIOCHEMISTRY AND BIOPHYSICS

Day: Friday
Date: 3-5-2013

Time: 9.00 A.M. To 12.00 Noon
Max. Marks: 75

N.B.:

1) All questions are **COMPULSORY**.
2) Put a tick mark in the appropriate box.
3) Use blue/black ball point pen only.
4) Question -1 should be completed within **20** minutes.
5) Each question for **MCQ** carries **ONE** mark.
6) Students will not allotted marks if he or she overwrites strikes or put on the cross once marked.

Seat No. _____ **Signature of Invigilator** _____

SECTION -I
(BIOCHEMISTRY)

Q.1 MCQ

1) Ribosomes involved in protein biosynthesis, are associated with which component of the cell?

a) ☐ Mitochondria
b) ☐ Rongh endoplasmic reticulum
c) ☐ Golgi apparatus
d) ☐ Cell membrane

2) Proteins are polymers of

a) ☐ Amino acids
b) ☐ Monosaccharides
c) ☐ Nucleic acids
d) ☐ None of these

3) The nitrogenous base not present in DNA structure is

a) ☐ Adenine
b) ☐ Guanine
c) ☐ Cytosine
d) ☐ Uracil

4) Urea is synthesized in

a) ☐ Kidney
b) ☐ Liver
c) ☐ Muscle
d) ☐ None of these

P.T.O.

5) Which of the following is not source for gluconeogenesis?

a) ☐ Glycerol

b) ☐ Pyruvate

c) ☐ Glycogenic amino acids

d) ☐ Tyrosine

6) The cholesterol associated with which of the following liporotein is known as good cholesterol

a) ☐ LDL

b) ☐ HDL

c) ☐ Chylomicrons

d) ☐ VLDL

7) Alanine aminotrasferase belongs to which class of enzymes?

a) ☐ Transferase

b) ☐ Hydrolyases

c) ☐ Isomerases

d) ☐ Lyases

8) The only immunoglobulin which can cross the placenta is

a) ☐ IgA

b) ☐ IgM

c) ☐ IgG

d) ☐ IgD

Q.2 Short questions (**ANY THREE**) (15)

a) Describe the structure and function of mitochondria.

b) Describe regulation of water and electorate balance.

c) Describe mechanism of enzyme action.

d) Gout

e) Plasma proteins and their function

Q.3 Long questions (**ANY ONE**)

a) What are triglycerides? Describe functions of trighycerides and write note on lipoproteins.

b) What are nitrogenous constituents of urine and blood? Describe Urea Cycle.

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SECTION - II
(BIOPHYSICS)

(48)

MCQ

Q.1

1) The process of heat transfer in which actual migration of particle does not take place.

a) ☐ Conduction

b) ☐ Convection

c) ☐ Radiation

d) ☐ All of these

2) Which lens is used to correct the defect of short sightness?

a) ☐ Convex

b) ☐ Plano convex

c) ☐ Concave

d) ☐ Plano concave

3) The electrical signals that control the rhythm of human heart beat can be measured by

a) ☐ ECT

b) ☐ ECG

c) ☐ EEG

d) ☐ EMG

4) Spontaneous disintegration of the nucleus of one or more atoms defines

a) ☐ X-rays

b) ☐ Photoelectric effect

c) ☐ Radioactivity

d) ☐ None of the above

5) One horse power is equal to

a) ☐ 746 watt

b) ☐ 764 watt

c) ☐ 647 watt

d) ☐ 476 watt

6) One micron is equal to

a) ☐ 10^{3}m

b) ☐ 10^{6}m

c) ☐ 10^{-3}m

d) ☐ 10^{-6}m

(P.T.O)

7) The absolute Scale temperature of 300 k is equal to

a) ☐ 0^0C

b) ☐ 27^0C

c) ☐ 100^0C

d) ☐ 273^0C

Q.2 Attempt **ANY THREE** of the following: **(15)**

a) Explain the use of radioisotopes in Medicine.

b) Explain the expansion of solids, liquids and gases.

c) Write short notes on EEG.

d) Explain the applications of gravity in nursing.

e) What are fundamental and derived units?

Q.3 Attempt **ANY ONE** of the following: **(15)**

a) Describe in details the human eye and usual defects.

b) What is lever, describe different types of levers. Explain the mechanism of traction in detail.

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RAJMACH – I: Oct. Nov. 2012
SUBJECT: BIOCHEMISTRY & BIOPHYSICS

Day : Monday
Date : 22-10-2012

Time :
Max. Marks: 15

N.B.

1) All questions are **COMPULSORY.**
2) Put a tick mark in the appropriate box.
3) Use blue/black ball point pen only.
4) Section I should be completed within **20 minutes.**
5) Each question carries **ONE** mark.
6) Students will not be allotted marks if he or she overwrites strikes or put on the cross once marked.

Seat No. : _____ **Signature of Invigilator:** _____

SECTION – I
(BIOCHEMISTRY)

M.C.Q.

1) Lactose belongs to which of the following class of carbohydrate?
   a) ☐ Monosaccharide
   b) ☐ Disaccharides
   c) ☐ Oligosaccharides
   d) ☐ Polysaccharides

2) What is the site of protein biosynthesis?
   a) ☐ Ribosomes
   b) ☐ Golgi apparatus
   c) ☐ Mitochondira
   d) ☐ Lysosomes

3) All of the following compounds are synthesized from cholesterol, EXCEPT_____.
   a) ☐ Bile pigment
   b) ☐ Bile acid
   c) ☐ Calcitriol
   d) ☐ Steroid hormones

4) Which of the following is not example of Ketone bodies?
   a) ☐ Acetone
   b) ☐ Acetoacetic acid
   c) ☐ β-hydroxy butyric acid
   d) ☐ Acetic acid

P.T.O.

5) All of the followings are examples of essential amino acids EXCEPT_____.

a) ☐ Valine

b) ☐ Isoleucine

c) ☐ Leucine

d) ☐ Glycine

6) Which type of RNA has clover leaf like structure?

a) ☐ r-RNA

b) ☐ t-RNA

c) ☐ m-RNA

d) ☐ hn-RNA

7) Out of hundreds of amino acids found in nature the number of amino acids present in protein are_____.

a) ☐ 20

b) ☐ 40

c) ☐ 30

d) ☐ 35

8) Which substance is added to prevent glycolysis ; along with the anticoagulant for collection of blood sugar sample _____.

a) ☐ Na – carbonate

b) ☐ Na – chloride

c) ☐ Na – fluoride

d) ☐ Na – citrate

SECTION – II
(BIOPHYSICS)

M.C.Q.

1) The unit of sound intensity is _____.
   - a) ☐ m/s
   - b) ☐ Joule
   - c) ☐ Watt
   - d) ☐ Decibel

2) If the resistance of the conductor is increased then current will _.
   - a) ☐ Remains constant
   - b) ☐ Decreases
   - c) ☐ Increases
   - d) ☐ Increases and Decreases

3) The instrument used to measure atmospheric pressure is ____.
   - a) ☐ Hydrometer
   - b) ☐ Siphon
   - c) ☐ Barometer
   - d) ☐ Lactometer

4) The tendency of an object to remain at rest is its _____.
   - a) ☐ Motion
   - b) ☐ Inertia
   - c) ☐ Mass
   - d) ☐ Weight

5) In human eye, the focal length of the lens is controlled by ____.
   - a) ☐ Ciliary muscles
   - b) ☐ Iris
   - c) ☐ The pupil
   - d) ☐ Retina

6) One horse power is equal to _____.
   - a) ☐ 9.8 Watt
   - b) ☐ 98 Watt
   - c) ☐ 74.6 Watt
   - d) ☐ 746 Watt

7) Newton's second law of motion gives the measure of _____.
   - a) ☐ Acceleration
   - b) ☐ Force
   - c) ☐ Momentum
   - d) ☐ Angular momentum

Day: Monday
Date: 22-10-2012

RAJMACH-I. Oct/Nov. 2012 (101)
Sub:- Biochemistry & Biophysics

Time:- 9:00 AM. TO 12:00 NOON
Max Marks:- 60

Q.2 Short questions (**ANY THREE**) **(15)**

a) Describe the sources and function of water in the human body.
b) What are hormones? Describe role of insulin in blood sugar regulation.
c) Write short note on endoplasmic reticulum and golgi apparatus..
d) Describe glycolysis pathway.
e) What is DNA? Describe its role in protein biosynthesis.

Q.3 Long questions (**ANY ONE**) **(15)**

a) Define and classify enzymes. Describe the diagnostic applications of enzymes.
b) What is hyperglycemia and hypoglycemia? How blood sugar level is maintained by gluconeogenesis?

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(102)

RAJMACH – I : APRIL/MAY 2012
SUBJECT : BIOCHEMISTRY & BIOPHYSICS

Day : Tuesday
Date : 24-04-2012

Time : 9.00A.M. To 12.00 Noon
Max. Marks : 75

N.B.

1) All questions are **COMPULSORY.**
2) Put a tick mark in the appropriate box.
3) Use blue/black ball point pen only.
4) Section I should be completed within **20 minutes.**
5) Each question carries **ONE** mark.
6) Students will not be allotted marks if he or she overwrites strikes or put on the cross once marked.

Seat No. : _____ **Signature of Invigilator:** _____

SECTION – I
(BIOCHEMISTRY)

M.C.Q.

1) End product of aerobic glycolysis is _____.
   a) ☐ Pyruvate
   b) ☐ Lactate
   c) ☐ Acetate
   d) ☐ Malate

2) What is the normal Blood Urea Level?
   a) ☐ 15-45 mg/dl
   b) ☐ 25-75 mg/dl
   c) ☐ 5-25 mg/dl
   d) ☐ 30 – 80 mg/dl

3) Scrum cholesterol level is elevated in all conditions EXCEPT _____.
   a) ☐ Hypothyroidism
   b) ☐ Diabetes Mellitus
   c) ☐ Renal Failure
   d) ☐ Nephrotic syndrome

4) What is the end product of β-oxidation of even chain fatty acid?
   a) ☐ Acetyl CoA
   b) ☐ Propionyl CoA
   c) ☐ Succinyl CoA
   d) ☐ Acyl CoA

P.T.O.

5) Which of the following is considered as risk factor for atherosclerosis?

a) ☐ LDL

b) ☐ HDL

c) ☐ VLDL

d) ☐ Chylomicrons

6) Enzymes are classified into how many classes?

a) ☐ 8

b) ☐ 4

c) ☐ 6

d) ☐ 3

7) The major site of fat digestion is _____.

a) ☐ Small intestine

b) ☐ Mouth

c) ☐ Pancreas

d) ☐ Stomach

8) The Immunoglobulin responsible for allergic response is _____.

a) ☐ IgA

b) ☐ IgD

c) ☐ IgE

d) ☐ IgM

Q.2 Short questions (**ANY THREE**) **(15)**

a) Describe Blood glucose regulation.

b) Describe the types of RNA and their role in protein synthesis.

c) Describe process of digestion and absorption of fat.

d) Define phospholipids. Write functions of phospholipids.

e) Write short note on mitochondria.

Q.3 Long questions (**ANY ONE**) **(15)**

a) Define enzymes. Explain their mechanism of action. Give example of enzymes estimated in cardiac disorders with their significance.

b) Define and classify proteins. Add note on plasma proteins.

* * *

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SECTION – II
((BIOPHYSICS)

M.C.Q.

1) When parallel rays comes to a focus in front of the retina is called _____.
   - a) ☐ Hypropia
   - b) ☐ Myopia
   - c) ☐ Colour blindness
   - d) ☐ Astigmatism

2) The process of heat transfer in which actual migration of particle take place_____.
   - a) ☐ Convection
   - b) ☐ Conduction
   - c) ☐ Radiation
   - d) ☐ All of these

3) EEG is record of changes in potential occurring in ____.
   - a) ☐ Spinal cord
   - b) ☐ Muscles
   - c) ☐ Brain
   - d) ☐ Heart

4) X-rays have _____.
   - a) ☐ Very less penetrating power
   - b) ☐ Very high penetrating power
   - c) ☐ Moderate penetrating power
   - d) ☐ No penetrating power

5) The friction between two surfaces in contact is independent of ____.
   - a) ☐ Nature of surfaces in contact
   - b) ☐ Normal reaction between the surfaces
   - c) ☐ Area of surfaces in contact
   - d) ☐ Material of two surfaces in contact

6) Unit of mass in British system _____.
   - a) ☐ gm
   - b) ☐ kg
   - c) ☐ mg
   - d) ☐ pound

7) One calorie is equal to _____.
   - a) ☐ 0.42 J
   - b) ☐ 4.2 J
   - c) ☐ 42 J
   - d) ☐ 420 J

RAJMACH-I - April/May-2012

Tuesday
24-04-2012

Biochemistry & Biophysics

104

9:00AM TO 12:00NOON.

Q.2 Short questions (**ANY THREE**) **(15)**

a) Give properties of X-rays and its use in medical field.

b) Explain what are Scalars and vectors. Write their different examples.

c) Explain in detail effect of heat on matter.

d) Explain the Coulombs law of electricity.

e) Explain Archimedes principle of specific gravity.

Q.3 Long questions (**ANY ONE**) **(15)**

a) List the different portions of electromagnetic spectrum and elaborate their application in nursing.

b) What is lever? Describe different types of lever. Explain lever mechanism in the human body.

* * *

F. Y. P. B. B. SC. (NURSING) : **WINTER - 2017**

SUBJECT : BIOCHEMISTRY & BIOPHYSICS

Day : Monday
Date : 09/10/2017

Time :
Max. Marks : 15

W-2017-3767

N.B.:

1) All questions are **COMPULSORY**.
2) Put a ☑ in the appropriate box.
3) Use blue / black pen only.
4) Section – I should be completed in **15** minutes.
5) Each question carries **ONE** mark.
6) Students will not be allotted marks if he/she overwrites strikes or puts white ink on the cross once marked.

Seat No.:_____
Jr. Signature:_____

Total Marks Obtained:_____
Examiners Signature:_____

SECTION – I [Biochemistry]

1) An eukaryotic cell differs from prokaryotic cell by presence of _____.

a) ☐ Nucleus
b) ☐ Mitochondria
c) ☐ Nuclear membrane
d) ☐ Endoplasmic reticulum

2) Blood urea level is markedly increased in _____.

a) ☐ Liver disease
b) ☐ Renal disease
c) ☐ Cardiac disease
d) ☐ Protein intake

3) Which of the following enzyme is therapeutically used for the treatment of leukemia?

a) ☐ Asparginase
b) ☐ Amylase
c) ☐ Aspartate
d) ☐ Hyalyronidase

4) Break down of glucose to pyruvate or lactate in known as _____.

a) ☐ Glycolysis
b) ☐ Glycogenesis
c) ☐ Gluconeogenesis
d) ☐ Glycogenolysis

P.T.O.

5) Glucose tolerance is decreased in _____.

a) ☐ Hyperactivity of adrenal cortex

b) ☐ Hyperpituitarism

c) ☐ Diabetes mellitus

d) ☐ All of these

6) The pentose sugar present in DNA is _____.

a) ☐ Ribose

b) ☐ Deoxyribose

c) ☐ Arabinose

d) ☐ None of these

7) Which antibody mediated hypersensitivity reactions?

a) ☐ IgG

b) ☐ IgM

c) ☐ IgA

d) ☐ IgE

8) Fatty liver may be prevented by the following EXCEPT:

a) ☐ Ethanol

b) ☐ Choline

c) ☐ Methionine

d) ☐ Lecithine

[Biophysics]

9) Newton's / kg is unit of _____.

a) ☐ Momentum

b) ☐ Velocity

c) ☐ Force

d) ☐ Acceleration

10) Distance and displacement are same only when body perform _____ motion.

a) ☐ Linear

b) ☐ Circular

c) ☐ Rotational

d) ☐ Oscillatory

...2

11) The percentage of hemoglobin is monitored by a _____.

a) ☐ Hydrometer

b) ☐ Barometer

c) ☐ Pacemaker

d) ☐ Pulse oximeter

12) The force of attraction between two unit point masses separated by a unit distance is numerically equal to _____.

a) ☐ Acceleration due to gravity

b) ☐ Gravitational potential

c) ☐ Universal gravitational constant

d) ☐ Gravitational intensity

13) S.I unit of magnetic induction is _____.

a) ☐ Weber

b) ☐ Weber per meter

c) ☐ Weber meter

d) ☐ Tesla

14) In human eye, the focal length of the lens is controiled by _____.

a) ☐ The pupil

b) ☐ Ciliary muscles

c) ☐ Iris

d) ☐ Retina

15) Thermal radiation are _____.

a) ☐ Mechanical waves

b) ☐ Electrical wave

c) ☐ Electromechanical waves

d) ☐ Electromagnetic waves

* * * *