

**POST BASIC
BACHELOR OF SCIENCE (NURSING)
B.Sc (N) (PB)**

Term-End Examination

June, 2015

00230

**BNS-102 : APPLIED SCIENCE (BIOCHEMISTRY,
BIOPHYSICS, MICROBIOLOGY, NUTRITION
AND DIETETICS)**

Time : 3 hours

Maximum Marks : 70

Instructions :

1. *Applied Science Course comprises of the following four parts :*

<i>Part A : Biochemistry</i>	<i>-</i>	<i>18 marks</i>
<i>Part B : Biophysics</i>	<i>-</i>	<i>17 marks</i>
<i>Part C : Microbiology</i>	<i>-</i>	<i>18 marks</i>
<i>Part D : Nutrition and Dietetics</i>	<i>-</i>	<i>17 marks</i>
2. *Students appearing for Applied Science Course Examination should follow the relevant instructions given below :*
 - (a) *For those appearing for the first time for the examination of Applied Science Course : The students should answer the questions of all the four parts in separate answer sheets provided. On the top of each answer sheet the student should enter the Enrolment No., Course Code, Course Title and Parts.*
 - (b) *For those who are reappearing for the examination of Applied Science Course : The students need to answer only those parts, on separate answer sheets, which have not been successfully completed.*

PART - A
Biochemistry

Attempt **all** the questions, the choice is internal.

1. (a) Define chemical change and give an example. **1+1+1=3**
(b) How is it different from a physical change ?

OR

- (a) List any four pathological conditions that may lead to fluid and electrolyte loss. **2+1=3**
(b) Name any two replacement solutions used in case of dehydration.

2. (a) What are polyunsaturated fatty acids ? Give an example. **1+1+1=3**
(b) Enlist any two physiological functions of polyunsaturated fatty acids.

3. (a) What is meant by denaturation of proteins ?
(b) List any four characteristics of enzymes. **1+2=3**

4. (a) Define plasma and serum. **1+2=3**
(b) Write any two functions of blood in human body.

OR

- (a) List any two normal constituents of urine.
(b) Give any two abnormal constituents of urine and state their associated disease. **1+1+1=3**

5. (a) Define metabolism. **1+1+1=3**
(b) State the two important steps of protein biosynthesis.

6. Fill in the blanks with suitable words. 6x $\frac{1}{2}$ =3
- (a) The process of digested food entering the circulatory system is called _____.
 - (b) The fluid surrounding or inside the cell is called _____.
 - (c) Soap gives lather readily when used with _____ water.
 - (d) The level of LDH₅ is increased both in _____ and obstructive jaundice.
 - (e) The citric acid cycle is said to be _____ as it is capable of anabolic as well as catabolic functions.
 - (f) The monomers of nucleic acids, are _____.

PART - B
Biophysics

Attempt all questions :

1. Explain Three laws of motion stated by Newton with one example for each law. **3x2=6**

2. Define Doppler effect. Give two examples of its use in medical field. **1+2=3**

3. List the advantages of mercury in a clinical thermometer. **3**

4. Fill in the blanks : **1x5=5**
 - (a) The capacity to do the work is known as _____.
 - (b) Lubricants to introduce Ryle's tube is used to reduce _____ force.
 - (c) Pressure due to atmosphere _____ as we go up.
 - (d) When the temperature of vapour pressure is equal to the atmospheric pressure it is called _____ point.
 - (e) Substances that do not allow electrons to pass through freely are said to be _____.

PART - C
Microbiology

Attempt **all** questions. Illustrate the answers wherever necessary.

1. Fill in the blanks : 6x $\frac{1}{2}$ =3
- (a) Causative organism for a venereal disease transmitted by sexual intercourse is _____.
 - (b) Urinary tract infection acquired in hospital is mainly caused by _____.
 - (c) Stool is collected in _____ medium and _____ method is applied to examine causative organism for cholera.
 - (d) Boiling is one of the simplest method of _____.
 - (e) The commonest tapeworm found in the intestine of man is _____.
2. Explain various forms of plague and name the bacteriological investigations required for diagnosis. 3+2=5
3. Discuss pathogenicity due to house fly and explain control measures. 3+1=4
4. Write short notes on **any two** of the following : 2x2=4
- (a) Allergic reactions
 - (b) Protection against HIV
 - (c) Candidiasis
5. Name causative organism and general characteristics of the following diseases. 1+1=2
- (a) Tetanus
 - (b) Diphtheriae

PART - D
Nutrition and Dietetics

Attempt **all** questions.

1. (a) Discuss the influence of disease on food intake and dietary pattern. 2+2+2=6
(b) Enumerate the information to be collected before planning the diet for patients and nurse's role in nutritional care.

2. (a) List any two clinical signs for following dietary deficiency conditions. 2+2=4
(i) Kwashiorkor
(ii) Pellagra.
(b) Explain the dietary management of any one of the above mentioned condition.

3. Explain major features of diet therapy for acute renal failure. 4

4. Match the following statement in **column 'A'** with the term in **column 'B'**. 1x3=3

Column 'A'	Column 'B'
(a) Inborn error of metabolism	(i) Addison's disease
(b) Vitamin D deficiency under 1 year of age	(ii) Tetany
(c) Deficiency of calcium in blood	(iii) Pellagra
	(iv) Galactosemia
	(v) Wernicke's syndrome
	(vi) Craniotabes
