

**POST BASIC
BACHELOR OF SCIENCE (NURSING)
B.Sc. (N) (PB)
Term-End Examination**

June, 2018

**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

Answer **ALL** questions. The choice, if any, is internal.

1. (a) What is Hard and Soft water ? How is temporary hardness of water removed ? $1\frac{1}{2}$
(b) What is a Buffer Solution ? Name any buffer system in the body. $1\frac{1}{2}$
2. (a) By what tests will you distinguish whether a given white powder is Glucose or Starch ? Explain. 2
(b) How is a Nucleoside structurally different from a Nucleotide ? 1
3. (a) Taking one example describe how the nomenclature of an enzyme is done. 2
(b) Name a Hormone used in the regulation of blood glucose. 1
4. Explain **any three** of the following terms in 3 or 4 sentences. $1 \times 3 = 3$
 - (a) Dialysis
 - (b) Micturition
 - (c) Rancidity
 - (d) Lipoproteins
 - (e) Hyper cholesterolemia
 - (f) Ketogenesis
5. (a) Give any three characteristics of Bio catalysts. $1\frac{1}{2}$
(b) Explain why a patient with blood group A, cannot be given group B blood of a donor. $1\frac{1}{2}$
6. Distinguish between **any two** of the following :
 - (a) Haemolysis and Plasmolysis $1\frac{1}{2} + 1\frac{1}{2}$
 - (b) Transcription and Translation
 - (c) Glycolysis and Glycogenolysis

PART - B

Attempt all questions.

1. (a) Explain the law of Floatation and its application in determining the Specific Gravity (S.G.) of Urine. 2+4=6
(b) Write down the multiples of Mass in the Metric System.

2. (a) Define Energy. $\frac{1}{2}+1\frac{1}{2}+2=3$
(b) Mention the source of energy for our body.
(c) State the uses of energy in our body.

3. Explain the commonly used scales for measuring temperature with the help of diagram. 3

4. Fill in the blanks in the under-mentioned statements.
 - (a) Microscope enables to obtain _____ of an object. 1
 - (b) Steel splinters in the eyes are removed by using _____. 1
 - (c) The distance from the optical centre of the lens to the principal focus is known as _____ of a lens. 1
 - (d) Patient Monitoring Machines collect the physiological information about the patient and changes into _____. 1
 - (e) Brain _____ is used for patients with uncontrolled seizures associated with epilepsy. 1

PART - C

Attempt all questions.

1. Define the following terms : 2x4=8
 - (a) Antigen and Antibody
 - (b) Allergy / Hypersensitivity
 - (c) Natural and acquired Immunity
 - (d) Obligatory and Faculative Parasites
2. Discuss about the moist heat as a method of destruction of microbes. 5
3. Fill in the blanks : 1x5=5
 - (a) An organism that derives its nourishment from a living plant or animal is called _____.
 - (b) Cholera is caused by a bacillus known as _____.
 - (c) Human disease caused by fungi are known as _____.
 - (d) The organism which causes tuberculosis is called _____.
 - (e) Ability of an organism to cause Infection is called _____.

PART - D

Attempt all questions.

Attempt all parts of a question at one place.

1. Explain the use of Recommended Dietary Intakes in Planning Balanced Diet. 5
 2. Discuss the functions of Nutritional Surveillance. 3
 3. Describe the dietary management in Jaundice and Hepatitis. 4
 4.
 - (a) Differentiate between food borne infections and food intoxication. 2+3=5
 - (b) Explain the measures to promote food safety.
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