No. of Printed Pages : **4**

**BNS-102**

02015

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

## Term-End Examination

## December, 2017

## 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 :*

| | | |
|---|---|---|
| ***Part A** : Biochemistry* | – | *18 marks* |
| ***Part B** : Biophysics* | – | *17 marks* |
| ***Part C** : Microbiology* | – | *18 marks* |
| ***Part D** : Nutrition and Dietetics* | – | *17 marks* |

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) Give any three important uses of water in the human body. 1½

   (b) Arrange the Osmotic Pressure in decreasing order, exerted by, 1M $CaCl_2$ ; 1M Glucose and 1M NaCl solutions. 1½

2. (a) Give any three biological functions of lipids. 1½

   (b) Explain in brief the process of 'Blood Clotting'. 1½

3. (a) What is the chemical composition of Benedict's reagent ? State the diagnostic use of this reagent. 1½

   (b) What are "Essential" fatty acids ? Give one example. 1½

4. Explain **any three** of the following terms, in **3** or **4** sentences each. **1x3=3**

   (a) Saponification
   (b) Universal Blood Donor
   (c) Denaturation
   (d) Glycoside
   (e) Active Transport
   (f) Hypoglycemia

5. (a) Draw a labelled diagram of a cell showing ICF, ECF and the sub divisions of ECF. 2

   (b) Write the chemical representation of a peptide bond ? 1

6. (a) Name the constituents of ATP. 1½

   (b) Give 3 differences between DNA and RNA. 1½

## PART - B

Answer **All** the questions.

1. (a) Explain the meaning of following : **2x2+2=6**
   (i) Units of measurements with example.
   (ii) Derived units of measurements with examples.
   (b) Explain the commonly used systems of measurements with examples.

2. Explain the effect of gravitational force on human body. Illustrate one example of its application in nursing. **3**

3. Explain with illustration the phenomenon of heat balance in normal body. **3**

4. Fill in the blanks in the undermentioned statements :
   (a) Light Travels faster in _____ than in material medium. **1**
   (b) Electric shock therapy means production of _____ by passing electric current of known voltage through the _____ for a particular period. **2**
   (c) Siphoning of fluid from a higher level to lower level is due to _____. **1**
   (d) The capacity of eye lens to change its focal length is called power of _____. **1**

## PART - C

Attempt **All** questions. **4x2=8**

1. Differentiate between the following terms :
   (a) Active and Passive Immunity
   (b) Parasite and Vector.
   (c) Primary and intermediate host
   (d) Pathogen and non pathogen parasites

2. Discuss Dry heat as a method of destruction of microbes. 5

3. Fill in the Blanks : 5x1=5
   (a) Toxins produces in the intestine is called _____.
   (b) Bacteria which grow in the absence of oxygen is called _____.
   (c) Leprosy is caused by _____.
   (d) The Bordetella pertusis is causative organism of _____.
   (e) Candidiasis is caused by an organism called _____.

## PART - D

Attempt **all** questions. Write answers of **all** parts of a question at one place.

1. (a) Define Macronutrients and Micronutrients.
   (b) List the functions of nutrients. 1+1½+4½=7
   (c) Explain the role of food in health and disease.

2. (a) List the methods of assessing the nutritional status. 2+2=4
   (b) Explain any one of the method of assessing nutritional status.

3. Explain diet therapy in Anaemia. 3

4. (a) List the Industrial Pollutants in food. 1+2=3
   (b) Write the health hazards of fertilizers and pesticides.