

**POST BASIC
BACHELOR OF SCIENCE (NURSING)**

B.Sc (N) (PB)

Term-End Examination **02759**

December, 2015

**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>– 18 marks</i>
<i>Part B : Biophysics</i>	<i>– 17 marks</i>
<i>Part C : Microbiology</i>	<i>– 18 marks</i>
<i>Part D : Nutrition and Dietetics</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)

Answer **all** the questions of this part. The choice is internal.

1. (a) What is meant by 'essential' amino acids ?
Give any one example. **$1\frac{1}{2}+1\frac{1}{2}=3$**
(b) Name three factors which affect digestion and absorption.

2. (a) Why do proteins act as efficient buffer systems ? **$1+1+1=3$**
(b) Define Plasmolysis.
(c) State the purpose of Benedict's test.

3. (a) Give the range of glucose level in blood of a healthy person after overnight fasting and after taking meals. **$1+2=3$**
(b) Name the factors affecting enzyme activity.

4. Distinguish between **any two** of the following :
(a) 'Good' cholesterol and 'Bad' cholesterol.
(b) Transcription and Translation. **$1\frac{1}{2}+1\frac{1}{2}=3$**
(c) Homolytic Jaundice and Obstructive Jaundice.

5. Define osmotic pressure. Give one clinical application of osmosis for a patient with throat infection. **$1+2=3$**

6. Explain **any three** of the following in **two or three** sentences : **$1\times 3=3$**
(a) Ketone Bodies
(b) Coenzymes
(c) Blood clotting
(d) Glycolysis
(e) pH

PART - B
(Biophysics)

Answer all questions :

1. Give the units in which the blood pressure of a patient is measured. 1
2. Why is cold sponge advised by doctors when a person suffers from high fever ? 1
3. Give any one use of a radioisotope in medicine. 1
4. State the law on which the use of urinometers is based. 1
5. Why does a patient sitting on the wheel chair falls forwards when it is suddenly stopped ? Give reasons. 2
6. What is 'random error' ? Give one example. 2
7. Write two factors on which flow of a liquid through an orifice depends. 2
8. What are the various factors by which heat is lost by the human body ? 2
9. Fill in the blanks : 5x1=5
 - (a) The capacity of eye lens to change its focal length is called _____.
 - (b) A person with myopia should use a _____ lens to correct the defect.
 - (c) The hearing aid which permits a physician or a nurse to listen to sounds made inside the body primarily in the heart and lungs is called _____.
 - (d) Ultraviolet radiations are used to _____ the operating rooms.
 - (e) Fluid flows from a region of _____ pressure to that of a lower pressure.

PART - C
(Microbiology)

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

1. Write in brief about **any three** of the following :
 - (a) Yeast and Yeast like Fungi. **2x3=6**
 - (b) Aerobes and anaerobes.
 - (c) Gram Positive and Gram Negative bacteria.
 - (d) HIV and AIDS.
2.
 - (a) List any four physical agents used in destruction of microbes. **2+2=4**
 - (b) Explain any one method in detail.
3. Fill in the blanks : **5x1=5**
 - (a) A strain which is originally virulent but is lowered in virulence for a particular host is referred as _____.
 - (b) Antibodies are the _____ line of defence.
 - (c) Phagocytic cells widely distributed in a vertebrate animals are called _____.
 - (d) Food poisoning is caused by _____.
 - (e) The arthropods which transmit disease are called _____.
4. Match the following from column A with column B and write the answer in your answer sheet :

Column A	Column B	1x3=3
(a) Amoebic dysentery	(i) Salmonella typhi	
(b) Typhoid fever	(ii) Clostridium tetani	
(c) Tetanus	(iii) Virulence	
	(iv) Anthrax bacillus	
	(v) Anaerobes	
	(vi) Entamoeba histolytic	

PART - D
(Nutrition and Dietetics)

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

1. (a) Define micronutrients and macronutrients.
(b) List the functions performed by nutrients.
(c) Describe the role of food as therapy. **1+1+4=6**

 2. Describe the dietary management of a patient with iron deficiency Anaemia. **4**

 3. Discuss the measures for preventing food borne infection and intoxication. **4**

 4. List the health hazards caused by following pollutants : **1½+1½=3**
 - (a) Hormones
 - (b) Antibiotics
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