

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

02985 **Term-End Examination**

**December, 2018**

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

*Time : 3 hours*

*Maximum Marks : 70*

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***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.*
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**PART A**  
**(Biochemistry)**

*Answer all the questions. Choices are internal. Each question carries 3 marks.*

1. (a) Give one example each for : 2  
Solid – Solid; Gas – Gas; Liquid – Liquid and  
Gas – Liquid solutions.
- (b) How will you identify 'Hard' water ? 1
2. (a) What is the purpose of Benedict's test ? 1
- (b) Explain Glucose Tolerance Test. 2
3. (a) Name two causes of turbidity in a wine sample. 1
- (b) Write any two functions of Cerebrospinal fluid. 2

**OR**

- (a) Why is adenosine triphosphate (ATP) important ? 1
- (b) Describe in brief the process of 'digestion'. 2

4. (a) What is meant by 'Regulation' of blood glucose? 2

(b) What is meant by 'Good' cholesterol? 1

OR

(a) Define Biocatalysts. 1

(b) Describe in brief the significance of Citric Acid cycle. 2

5. (a) Name the agents which cause the denaturation of proteins. 2

(b) How is Plasma different from Serum? 1

6. Define any *three* of the following keywords, in one sentence each :  $3 \times 1 = 3$

(a) Fermentation

(b) Dialysis

(c) Anaemia

(d) Coenzyme

(e) Rancidity

**PART B**  
**(Biophysics)**

*Answer all questions.*

7. Briefly describe the standard unit of length in *Metric System*. Enlist any two multiples of this standard unit. 2
8. Why is it important to lower the head of a person when he/she faints ? 1
9. What is a lactometer ? State the law under which it functions. 1
10. How does hearing result in human-beings ? 2
11. What is the source of energy in our body ? State the functions of energy in our body. What is the unit of measure of body energy ? 2
12. Explain the principles of sterilization of surgical tools in an autoclave. 1
13. Explain the meaning of power of accommodation of eye lens. 1
14. Enlist any four effects of electric current. Explain any one of the effects. 2

15. Fill in the blanks :

5×1=5

- (a) Siphon is an example of \_\_\_\_\_ which helps to move liquid from higher level to lower level.
- (b) While biting food using our front cutting teeth incisors, our jaws act as a class \_\_\_\_\_ lever.
- (c) Atmospheric pressure is due to the weight of \_\_\_\_\_ on the surface of Earth.
- (d) Most of the heat of the body is lost through the \_\_\_\_\_.
- (e) Stethoscope works on the principle of \_\_\_\_\_.

**PART C**  
**(Microbiology)**

*Answer all questions.*

- 16.** Explain any five factors influencing the growth of bacteria. 5
- 17.** Differentiate between the following terms : 4×2=8
- (a) Direct transmission and Indirect transmission of infection
  - (b) Primary host and Intermediate host
  - (c) Endotoxins and Exotoxins
  - (d) Gram positive and Gram negative bacteria
- 18.** Describe dry heat as a method of destruction of microbes. 5

**PART D**  
**(Nutrition and Dietetics)**

*Attempt all questions.*

19. (a) Differentiate between micronutrients and macronutrients.
- (b) Discuss the functions of nutrients.
- (c) State the role of food in health and disease. 2+3+2=7
20. Explain Total Parenteral Nutrition. 3
21. (a) List the symptoms of a patient with jaundice.
- (b) Discuss the dietary management of a patient with jaundice. 1+2=3
22. (a) List the agricultural pollutants in food.
- (b) Discuss health hazards of any one of the agricultural pollutants in food. 2+2=4
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