

No. of Printed Pages : 9 **BNS-102/BNS-202**

**POST BASIC BACHELOR OF SCIENCE
(NURSING) [B. SC. (NURSING)(PB)]**

Term-End Examination

December, 2022

BNS-102/BNS-202 : APPLIED SCIENCES

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) *Four 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*

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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.*

BNS-102-A

Part-A (Marks : 18)

BIOCHEMISTRY

Note : (i) *Answer all the **six** questions.*

(ii) Each question carries 3 marks.

(iii) Choice is internal.

Follow the word limit in answering the question as given below :

5 marks — within 500 words

3 marks — within 200 words

2 marks — 50 words

1 mark — 20-30 words

1. (a) Give *one* example each for physical change, chemical change, compound and mixture. 2
(b) What are Isotopes ? 1
 2. (a) Define Haemolysis and Plasmolysis. 2
(b) Give *one* example each for the *two* types of Buffer Solutions. 1
 3. (a) Write *three* differences between DNA and RNA. $1\frac{1}{2}$
(b) Describe the Iodine test for starch. $1\frac{1}{2}$
 4. (a) What are Conjugated Proteins ? Give an example. 2
(b) Name any *two* factors that affect the enzyme activity. 1
- Or*
- (a) Explain why persons with AB blood group are said to be Universal Acceptors. 2
(b) What is Cerebrospinal Fluid ? 1
 5. (a) Name the constituents of ATP. $1\frac{1}{2}$
(b) What are the major substrates of gluconeogenesis ? $1\frac{1}{2}$

Or

- (a) "Removal of ammonia from the body is essential." Give reasons. 2
- (b) Name the lipoprotein that has highest amount of cholesterol. 1
6. Define any **three** of the following keywords, in one sentence each : 3
- (a) Antibody
- (b) Peptide
- (c) Fermentation
- (d) Electrolysis
- (e) Radioactivity
- (f) Hemolytic Jaundice

BNS-102-B**Part-B**

(Marks : 17)

BIOPHYSICS

Note : (i) Attempt *all* questions.

(ii) Attempt all parts of the question at one place.

1. Write in brief about the following : 3×2=6
 - (a) Hypermetropia and its correction
 - (b) Humidity and its use in operation theater
 - (c) Application of Newton's third law of motion in a patient

2. Define any *three* of the following : 3×2=6
 - (a) Radioactivity
 - (b) Electromyography
 - (c) Insulation
 - (d) Magnetism

3. Fill in the blanks : 5×1=5
- (a) A process of heat transfer in which heat energy flows between different parts of an object is called
 - (b) Energy in transit is called
 - (c) Record of action potential of active heart muscle is called
 - (d) Subatmospheric pressure can be created by
 - (e) The devices used in transformation of energy in work are referred as

BNS-102-C**Part-C**

(Marks : 18)

MICROBIOLOGY

Note : (i) Attempt *all* questions.

(ii) Attempt *all* parts of the question at one place.

1. Write in *two* to *three* lines about the following :
4×2=8
 - (a) Endotoxins and Exotoxins
 - (b) Primary and Secondary infection
 - (c) Tinea Corpor's and Tinea Capit's
 - (d) Gram positive and Gram negative

2. Explain the physical agents which can destruct the microbes. 5

3. Fill in the blanks : 5×1=5
 - (a) The antigen when administered in the body forms antibodies is called
 - (b) An agent capable of transferring pathogen to other organism is known as

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- (c) The organism which harbours the adult stage of parasite is referred as host.
- (d) A sudden increase in the incidence rate in large population over a wide areas is called
- (e) A specific substance produced in the body in response to an antigen is called

BNS-102-D**Part-D**

(Marks : 17)

NUTRITION AND DIETETICS

Note : (i) Attempt *all* questions.

(ii) Attempt all parts of a question at one place.

1. (a) List the major nutrients. 2
- (b) Describe the role of food in health and diseases. 4
2. Explain the concept of Nutritional Surveillance. 3
3. Explain dietary management of a patient with ulcerative colitis. 3
4. Name *two* agriculture pollutants. Write health hazards of pesticides and fertilizers. 1+4