No. of Printed Pages : 7

BNS–102/BNS–202 (A to D)

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

Term-End Examination

December, 2024

BNS-102/BNS-202 : APPLIED SCIENCES

Time : 3 Hours *Maximum Marks : 70*

Instruction :

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.*

BNS–102-A/BNS–202-A

Part–A (Marks : 18)

APPLIED SCIENCES—BIOCHEMISTRY

Note : *(i) Attempt **all** questions.*

(ii) Choice is internal.

(iii) Each question carries 3 marks.

*(iv) Word limit for questions carrying 2 marks : **40-50** words, 3 marks : **60-80** words, 4 marks : **80-100** words, 5 marks : **150-200** words.*

1. (a) Write use of iodine radioisotope. 1

   (b) What is electrovalent bonding ? Give an example. 2

2. (a) Why do water pipes burst at freezing temperatures ? 1

   (b) Calculate the normality of sulfuric acid if 9.8 g of H_2SO_4 is present in 200 ml of solution. 2

   (Given equivalent weight of H_2SO_4 = 49)

3. (a) Why are polyunsaturated fatty acids important in our diet ? 1

   (b) Write differences between DNA and RNA. 2

4. (a) Explain the meaning of the primary structure of a protein. 1

(b) What is protein denaturation ? Write its effects on structure and function of a protein. 2

Or

(a) Differentiate between coenzyme and cofactor. 1

(b) Explain the diagnostic application of enzymes in heart disease. 2

5. (a) Write *three* functions of blood. $1\frac{1}{2}$

(b) List *three* diseases that occur due to changes in composition of Cerebrospinal Fluid (CSF). $1\frac{1}{2}$

6. (a) How are products of protein catabolism utilized in our body ? $1\frac{1}{2}$

(b) How many ATP molecules are generated by complete oxidation of a 16 carbon fatty acid, palmitic acid ? $1\frac{1}{2}$

Or

(a) List any *two* differences between glucose oxidation and fatty acid oxidation. 1

(b) Explain Glucose Tolerance Test (GTT). 2

BNS–102-B/BNS–202-B

Part–B (Marks : 17)

APPLIED SCIENCES : BIOPHYSICS

Note : *(i) Attempt **all** questions.*

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

*(iii) Follow the word limit : 1 mark within **20-30** words, 2 marks within **50-70** words, 3 marks within **200** words.*

1. Explain the meaning of the following terms : 1×4=4

   (i) Myopia

   (ii) Presbiopia

   (iii) Astigmatism

   (iv) Power of Accommodation

2. (a) Differentiate between conduction and insulation. Support your answer with examples. 4

   (b) Describe the effects of electric current on human body. 3

3. Write short notes on any *three* of the following : 2×3=6

   (a) Doppler effect

   (b) Clinical use of radioisotope

   (c) Defibrillation

   (d) Lever action of Foot and Jaw

BNS–102-C/BNS–202-C

Part–C (Marks : 18)

APPLIED SCIENCES : MICROBIOLOGY

Note : *(i) Attempt **all** questions.*

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

1. Write in brief about the following : 4×2=8

   (a) Herpes Simplex Virus (HSV)

   (b) Immune Response

   (c) Pathogenic Rickettsiae

   (d) General characteristics of Staphylococci

2. (a) Enlist the sources of infection in humans. 2

   (b) Explain the factors influencing infection. 2

3. Differentiate between the following pairs : 2×3=6

   (a) Dry heat and moist heat sterilization

   (b) Parasite and vector

   (c) Basic and acidic stain

BNS–102-D/BNS–202-D

Part–D (Marks : 17)

APPLIED SCIENCES—NUTRITION AND DIETETICS

Note : *(i) Attempt **all** questions.*

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

*(iii) Follow the word limit : 2 marks within **50-70** words, 5 marks within **500** words.*

1. (a) Write the classification of food. Give *one* example for each of the food groups. 2

   (b) Discuss the steps you will take as a nurse for planning balanced diet. 5

2. Describe how will you assess nutritional status of a child using Anthropometric Measurements. 4

3. Explain dietary management for the following : 2×3=6

   (i) Diarrhoea

   (ii) Peptic ulcer

   (iii) Haemorrhoids

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