No. of Printed Pages : 8

BNS-102/202

POST BASIC BACHELOR OF SCIENCE (NURSING)

[B. SC. (N) PB]

Term-End Examination

June, 2025

BNS-102/202 : APPLIED SCIENCES (BIOCHEMISTRY, BIOPHYSICS, MICROBIOLOGY NUTRITION AND DIETETICS)

Time : 3 Hours *Maximum Marks : 70*

Note : 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.

BNS–102/202-A

Part–A (Marks : 18)

APPLIED SCIENCES—BIOCHEMISTRY

Note : *(i) Attempt all the questions. Each question carries equal marks.*

(ii) Follow the word limit as given below :

3 marks : ***100*** *words*

2 marks : ***50*** *words*

1 mark : ***20-30*** *words.*

1. (a) Explain any *one* of the following with a suitable example : 2

   (i) Ionic Bonding

   (ii) Covalent Bonding

   (b) List any *two* radioisotopes and their use in medicine. 1

2. Describe the process of dialysis. 3

3. Explain any *three* of the following : 3×1=3

   (i) Lipoprotein

   (ii) Glycolipid

   (iii) Disaccharide

   (iv) Nucleotide

4. (a) Explain the formation of a peptide bond. 2

   (b) Write any *two* biological functions of proteins. 1

5. Differentiate between gluconeogenesis and glycogenolysis. 3

6. Fill in the blanks : $6\times\frac{1}{2}=3$

   (a) Level of ..... in blood is high in diabetes mellitus.

   (b) Elevated levels of ..... are found in atherosclerosis and heart diseases.

   (c) ..... is not detectable in urine under normal conditions.

(d) An individual with blood group 'AB' is known as universal ..... .

(e) Decreased level of serum albumin is an indicator of ..... .

(f) Gout is associated with high levels of ..... in blood.

BNS–102/202-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 :

*3 marks within **200** words, 2 marks within **50-70** words.*

1. (a) Explain the meaning by centre of gravity. 2

   (b) Explain the effect of gravitational force on human body with the help of *two* examples. 2+2

2. (a) Discuss the characteristics of sound. 3

   (b) Explain *two* applications of Doppler effect. 2

3. (a) Explain the mechanism of heat transfer. Support your answer from nursing practice. 4

   (b) Differentiate between Electro-encephalography (EEG) and Electro-myography (EMG). 2

BNS–102/202-C

Part–C (Marks : 18)

APPLIED SCIENCES : MICROBIOLOGY

Note : *(i) Attempt all questions.*

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

*(iii) Follow the word limit i.e. for 2 marks questions within **50-70** words, 4 marks within **250** words.*

1. Write in brief about the following : 2×4=8
   (a) Adaptive immune system
   (b) Animate vectors
   (c) Pathogenic spirochaetes
   (d) *Haemophilus*
2. Describe the factors which influence growth of bacteria. 4
3. Differentiate between the following pair : 2×3=6
   (a) Bacteroides and Fusobacteria
   (b) Endemic Typhus and Epidemic Typhus
   (c) Virus Hepatitis Type-B (HBV) and Type-C (HCV)

BNS–102/202-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 : 1 mark within **20-30** words, 2-3 marks within **50-100** words, 5 marks within **500** words.*

1. (a) Differentiate between micronutrients and macronutrients. 2

   (b) Describe the role of food in health and disease with reference to food as therapy. 5

2. Describe the dietary management of a patient with cirrhosis of liver. 4

3. (a) Describe the food sanitation measures to prevent food illness. 2

   (b) Name any *two* foods products commonly subject to food infections. 1

   (c) Write the preventive measures you will take to prevent food infection. 3

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