No. of Printed Pages : 11

BNS-202

POST BASIC BACHELOR OF SCIENCE (NURSING)

[B. SC. (N) PB]

Term-End Examination

June, 2026

BNS-202 : APPLIED SCIENCE (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–202-A

Part–A (Marks : 18)

APPLIED SCIENCES—BIOCHEMISTRY

Note : *(i) Attempt all the questions. Each question carries 3 marks.*

(ii) Follow the word limit as given below : 1-2 mark : ***50-70*** *words.*

(iii) Choice if any is internal.

1. (a) Which type of change (physical/ chemical) is taking place in the following : 1½

   (i) Dissolution of salt in water

   (ii) Explosion of a cracker

   (iii) Digestion of a carbohydrate

   (b) Label the followings as mixture/ compound : 1½

   (i) Molten copper and molten zinc mixed and cooled to form brass.

(ii) One gram iron powder mixed with one gram sulphur powder.

(iii) Solid glucose powder mixed with equal amount of sand and stirred well.

2. (a) Name *four* factors which influence solubility of a substance in solution. 2

(b) Distinguish between interstitial and intracellular fluids. ½+½

3. (a) Write any *four* characteristics of an enzyme. 2

(b) Name any *one* essential amino acid and any *one* non-essential amino acid. ½+½

Or

(a) Name *two* types of proteins, based on shape with *one* example of each. ½+½+½+½

(b) Name *one* enzyme of importance in Heart disease and *one* in Liver disease. ½+½

4. (a) Enlist *three* biological functions of lipids. 1½

(b) What is Benedict's test ? 1

(c) Name a Polysaccharide. ½

Or

(a) Explain the causes of malabsorption syndrome. 1

(b) Write a brief note on Regulation of Blood Glucose. 2

5. (a) Which blood group is called "Universal Donor" ? Give reason. ½ + 1

(b) Explain Micturition. 1

(c) Presence of ketone bodies in urine is indicative of which disease ? ½

6. Give the meaning of any *six* of the following key words : 6×½=3

(a) Metabolic pathway

(b) Glycosuria

(c) Anabolism

(d) Glycogenesis

(e) Dialysis

(f) Rancidity

(g) Peptide

(h) Antibody

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 :

*1-2 marks within **20-40** words.*

1. (a) State Newton's first law of motion. 1

   (b) Why is brain surgery frequently done with patient in a sitting or semi-sitting position ? 1

   (c) Sometimes, doctors suggest under-water exercises for rehabilitation of muscles and joints. State the reason. 1

2. (a) Write the full form of BMR. What does it signify ? 1+1

   (b) What type of lever action is seen in foot ? 1

3. Fill in the blanks : 5×1=5

   (a) 15 gm is equal to ..... kilogram (kg).

   (b) 40°C is equal to ..... °F.

   (c) ..... mechanism of heat transfer determines the effectiveness of ventilation in a building.

   (d) Pulse rate is express in units of ..... .

   (e) ..... is a simple "hearing aid" permits a physician to listen to sounds made inside the body.

4. (a) Calculate the frequency of a radiation having wavelength 5×10^{-7} m. 2

   (d) Differentiate between Hypermetropia and Presbyopia. 1

5. (a) What is diathermy process ? 1

   (b) Define current and write its unit. 1

   (c) What is a transducer ? Name *two* instruments which use transducer. 1

BNS–202-C

Part–C (Marks : 18)

APPLIED SCIENCES : MICROBIOLOGY

Note : *(i) Attempt all questions.*

(ii) Attempt all parts of a question in sequence.

*(iii) Follow the word limit i.e., for 2 marks questions within **40-50** words, 5 marks within **150-200** words.*

1. Write in brief on the following : 4×2=8
   (a) Reproduction in bacteria
   (b) *Clostridium tetani*
   (c) Control of viral diseases
   (d) Passive acquired immunity
2. Explain various types of infections. 5
3. Fill in the blanks : 5×1=5
   (a) Glandular tuberculosis is caused by ..... type of tubercle bacillus.
   (b) Putrefaction by bacteria on a material is the process of decomposition of ..... .

(c) Nucleus contains ..... responsible for transmission of hereditary characteristics.

(d) The Science that deals with fungi is called ..... .

(e) When two hosts harbour the same parasite, either is called ..... host.

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 : 1-2 mark within **20-40** words, 3-4 marks within **50-90** words.*

1. (a) Explain the concept of Balanced Diet. 2

   (b) Discuss enteral feeding method used in clinical area. 2

2. Enlist symptoms and describe dietary management of the following conditions : 3+3

   (a) Cirrhosis of Liver

   (b) Pancreatitis

3. Enlist intentional adulterant of the following and describe their health effects : 2+2

   (a) Mustard Seeds

   (b) Kesari Dal

4. Elaborate Dietary survey method as a method of nutritional status assessment. 3

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