No. of Printed Pages : 6

BNS-102

POST BASIC
BACHELOR OF SCIENCE (NURSING)

Term-End Examination,

June, 2012

02745

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

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) ***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.*

PART-A Biochemistry

- *Attempt **all** the questions. The choice is internal.*

1. (a) Define isotopes ? **1+2=3**
   (b) Mention the pH ranges of acidic and alkaline solutions.

2. (a) Define osmosis. **1+2=3**
   (b) A diahhoreal patient has lost a greater part of fluids than ions. What type of saline would be required for him ?

3. (a) Write about lipoproteins **1+2=3**
   (b) Explain the functions of HDL and LDL.

4. (a) What are reducing sugars ? Give an example of a reducing disaccharide. **2+1=3**
   (b) Name the test used for detecting sugar in the urine

5. State **any two** abnormal constituents of urine and their specific disease conditions. **1+2=3**

6. Define ketogenesis. State a physiological and a pathological condition under which ketogenesis is observed. **1+2=3**

PART-B Biophysics

- *Attempt **all** questions.*

1. Diagrammatically explain the factors which affect on heat balance of human body. 3

2. Define the term motion. Discuss the Newtons three laws of motion. Support your answer with illustrations from each law of motion. ½+4½=5

3. Define radioisotopes. Explain clinical uses of radioisotopes. 1+3=4

4. Define the following terms and give ***one*** example from nursing : 5x1=5
   (a) Density.
   (b) Fluid pressure.
   (c) Doppler effect.
   (d) Centre of gravity.
   (e) Electro encephalography.

PART-C Microbiology

- *Attempt **all** questions. Illustrate the answers wherever necessary.*

1. Fill in the blanks : **6x½=3**

   (a) The first scientist who had discovered the bacillus Mycobacterium tuberculosis was _____ .

   (b) Gonorrhoea is caused by a diplococcus named _____ .

   (c) Bacteria growing only in the presence of oxygen are called _____ .

   (d) Gram positive yeast like fungus causing ulcers in the mouth of infants is known as _____ .

   (e) Toxins produced by fungi are known as _____ .

   (f) The virus responsible for causing AIDS is called as _____ .

2. Define the following terms in *one* sentence each : **6x½=3**

   (a) Subclinical infection

   (b) Vaccine

   (c) Endotoxin

   (d) Vector

   (e) Parasite

   (f) Selective media

3. Distinguish between ***any three*** of the following : **3x2=6**

(a) Incubator and Hot air oven.

(b) Bacterial ribosomes and bacterial mesosomes.

(c) Rota virus and Retro virus.

(d) Natural passive Immunity and Artificial passive immunity.

(e) Parasitology and Entomology

4. Write on ***any three*** of the following : **3x1=3**

(a) Fractional (Intermittent) sterilization.

(b) Virus mutation.

(c) Transmission of Influenza viruses.

(d) Immunology.

(e) Rat flea (Xenopsiella)

5. Name **one** hookworm and **one** roundworm found in the intestine of man. What disease do they cause ? How are they transmitted in humans ? **1+1+1=3**

PART-D Nutrition and Dietetics

- *Attempt all questions.*

1. (a) List **any four** types of dietry modification.
   (b) Enumerate the special points which you will keep in mind while planning diet for the patient. **2+3=5**

2. (a) Define Basal Metabolic Rate (BMR). **2+3=5**
   (b) List **any three** foods of each which are permitted and not permitted in Low Residue Diet.

3. Explain the specific nutritional interventions in chronic renal failure. **5**

4. Match the following statement in column A with the term in column B. **1x2=2**

Column A	**Column B**
(i) Vital Element of immune system of body.	(A) Sodium
(ii) Regulation of pH of body fluids.	(B) Calcium
	(C) Fats
	(D) Proteins