00190

POST BASIC
BACHELOR OF SCIENCE (NURSING)
B.Sc (N) (PB)
Term-End Examination,
December, 2012

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.*

BNS-102   1   **P.T.O.**

- *Answer all questions.*
- Choice is internal

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1. List the physical properties that distinguish metals from non - metals. **1.5+1.5**

   OR

   (a) Name the chemical reaction that occurs between an inorganic acid and inorganic base. **1**

   (b) Give *two* practical applications of this reaction in the field of medicine. **2**

2. (a) Give *two* examples of poly unsaturated fatty acids in the diet. **1**

   (b) Mention *any two* physiological functions of polyunsaturated fatty acids in the human body. **2**

3. Enumerate *one* physiological role of each of the following peptides : **1x3=3**
   (a) Oxytocin
   (b) Gastrin
   (c) Enkephalin

4. (a) State *any four* functions of blood in the human body. **0.5x4=2**

   (b) Name *two* metabolites which are *not* the normal constituents of urine of a healthy person. **1**

5. (a) Insulin and Glucagon are said to be **2** antagonistic to each other in their action. Explain why.

   (b) Which metabolites act as substrates for **1** gluconeogenesis ? Mention any *two*.

6. Fill in the blanks with suitable words : **0.5x6=3**

   (a) The energy currency molecule, Adenosine triphosphate is made up of Adenine, _____ and three molecules of phosphate.

   (b) Milk intolerance in infants is caused by _____ .

   (c) _____ give lather even with hard water.

   (d) _____ is called the bad cholesterol in blood.

   (e) Urea, a waste product of protein metabolism, is formed from _____ released from amino acids.

   (f) Coenzyme A is a derivative of _____, a water - soluble, B group vitamin.

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PART–B Biophysics

1. Name the commonly used systems of measuring physical quantities. Which of the two systems are most frequently used in nursing practice. **1+1=2**

2. Define *any five* of the followings : **1x5=5**

   (a) Velocity

   (b) Acceleration

   (c) Newton's third law of motion

   (d) Buoyancy

   (e) Calorie

   (f) Defibrillation

3. Define energy. Give examples of use of energy in the body. **1+2=3**

4. Explain the term 'hearing' with illustration. **1+2=3**

5. Fill in the blanks : **1+4=4**

   (a) Measurement of any quantity has two characteristics - a - numerical value and a

   _____

(b) Ultraviolet radiation do not penetrate into the tissues more than _____ cm.

(c) In the Fahrenheit scale the freezing point of water is _____ .

(d) ECG. is the record of action potential of the active _____ .

PART-C Microbiology

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

1. Write **T** for true and **F** for false against the statements in the answer book : ½x6=3
   (a) *Neisseria* are bean shaped cocci in pairs.
   (b) Diphtheria bacilli are V or L shaped.
   (c) Toxin produced by Fungi is called Myxotoxicosis.
   (d) Virus that infects bacteria is called bacteriostatic.
   (e) Peristalsis is a progressive and rhythmic contraction of the intestine.
   (f) Antibiotic is an antibacterial substance produced by helminthes.

2. Fill in the blanks : ½x6=3
   (a) Streptococci are cocci in _____ .
   (b) Long flexible spiral shaped organisms are called _____ .
   (c) Hanging drop method is used to study _____ in living organisms.
   (d) Protein coat of a virus is called _____ .
   (e) Heat is one of the most effective reliable and economical agent.
   (f) A complement fixation test for syphilis is _____ test.

3. Distinguish between *any three* of the following : **2x3=6**
   (a) Inanimate and Animate vectors.
   (b) Granuloma and Ameboma.
   (c) Immunology and Serology
   (d) Mycoplasma and Chlamydias
   (e) Gonococci and Meningococci
   (f) Mesosomes and Ribosomes

   OR

   Give an account of the three lines of defence in the body. **2x3=6**

4. Answer *any three* of the following questions as directed : **1x3=3**
   (a) Define microbes. What is the unit of measurement for microbes ?
   (b) What is chemotherapy ?
   (c) Differentiate between auto - infection and re - infection
   (d) Where would you locate plague bacilli ?
   (e) Incineration.

5. Give an account of the life - cycle of any round **3** worm *OR* flat worm *OR* protozoon studied by you.

   OR

   Enumerate briefly three diseases caused by **3** bacteria *OR* viruses.

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PART–D Nutrition and Dietetics

- *Attempt **all** questions. Attempt all parts of a question at one place.*

1. (a) Explain the term Balanced diet. **1+4=5**
    (b) Enumerate specific features you will keep in mind while planning diet for pregnant women.

2. Describe the methods / ways of assessing nutritional status. **5**

3. Describe the dietary management of a patient with cardio vascular disorders. **4**

4. Enlist the health hazards caused by following pollutants. **3**
    (a) Fertilizers
    (b) Hormones
    (c) Cadmium

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