No. of Printed Pages : 6

BNS-102

POST BASIC
BACHELOR OF SCIENCE (NURSING)

Term-End Examination,

December, 2011

00021

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 buffer solutions. 1+2=3
   (b) What are isotopes ? Name any *one* isotope that finds application in medical diagnostics.

2. Differentiate between hypotonic and hypertonic saline. Under what conditions would you use hypertonic saline solution ? 2+1=3

3. (a) Mention the functions of LDL. 1+2=3
   (b) Define carbohydrates. Name the naturally occurring anticoagulant.

4. Write two characteristics of enzymes. Give examples of any two enzymes whose levels are monitored in case of myocardial infarction. 1+2=3

   OR

   What are proteins ? Name any two proteins and state one function of each. 1+2=3

5. (a) Write the difference between plasma and serum. 1+2=3
   (b) State any two biological functions of CSF.

6. Write the anabolic pathways. Name the anabolic pathway by which glucose is stored in the body. 2+1=3

PART-B Biophysics

- *Attempt **all** questions.*

1. Describe the characteristics of sound. 3

2. Define Ultraviolet radiation. Explain the two main effects of ultraviolet radiation. Give one example of each effect. 2+3=5

3. List defects of vision and write its remedies. 2+2=4

4. Define the following terms and give ***one*** example from nursing application. 5x1=5

   (a) Electric Shock Therapy

   (b) Velocity

   (c) Isotopes

   (d) Energy

   (e) Insulation

PART-C Microbiology

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

1. Fill in the blanks : 6x½=3

   (a) The first scientist who had developed vaccine against rabies (hydrophobia) was _____ .

   (b) Syphilis is caused by a spirochaete named as _____ .

   (c) Arrangement of several flagella all over the bacterial surface is termed as _____ .

   (d) The optimum temperature for the growth of most pathogenic bacteria in laboratory is _____ °C.

   (e) _____ is an anaerobic bacterium which forms endospores.

   (f) Human diseases caused by fungi are collectively called as _____ .

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

   (a) Thrush

   (b) Nosocomial infection

   (c) Exotoxin

   (d) Virulence

   (e) Pathogen

   (f) Differential media

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

(a) Disinfectant and Antiseptic.

(b) Bacterial spore and bacterial capsule.

(c) Bacteriostatic and bactericidal agents.

(d) Sterilization and disinfection.

(e) Protozoology and Helminthology.

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

(a) Filtration

(b) Bacteriophage

(c) Transmission of Hepatitis B virus

(d) Serology

(e) Sandfly (Phlebotomus)

5. List the malarial parasites causing malaria in man. Which vector transmits malaria ? How do you diagnose malaria in peripheral blood smear ? **1+1+1=3**

PART-D Nutrition and Dietetics

- *Attempt **all** questions.*

1. Define Balanced Diet. List the food groups and give two examples of each food group. **2+3=5**

2. List the symptoms of PEM. Explain the dietry management in PEM. **2+3=5**

3. Write the dietary management in the following conditions. **1½+1½=3**
   (a) Cholecystitis
   (b) Hepatitis

4. Match the following of **Column A** with **Column B** and write the alphabet in your answer book. **1x4=4**

	Column - A		Column - B
(a)	Adding too much of permitted Preservative in food	(i)	Coenzymes
(b)	Spongy bleeding gums	(ii)	Enzymes
(c)	A protein regulating a chemical reaction	(iii)	Water soluble vitamins
(d)	Vit. A, D, E and K	(iv)	Fat soluble vitamins
		(v)	Deficiency of Vit. C
		(vi)	Deficiency of Niacin
		(vii)	Adulteration
		(viii)	Contamination