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BNS-102

POST BASIC
BACHELOR OF SCIENCE (NURSING)
B.Sc (N) (PB)
Term-End Examination 00679
December, 2014

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

Answer **all** the questions of this part; the choice is internal.

1. (a) Define osmosis. **1+2=3**

(b) Discuss briefly one clinical application of osmosis for patients with renal failure.

OR

(a) Define electrolytes. **1+2=3**

(b) Give any two examples indicating the physiological importance of electrolytes.

2. (a) What is meant by reducing ability of carbohydrates ? Name a clinically important chemical test based on reducing ability of carbohydrates. **1+1+1=3**

(b) State the function of high density lipoproteins.

3. (a) Define peptides. **1+1+1=3**

(b) Name any one physiologically important peptide and give its physiological role.

4. (a) The persons with 'O' blood group are called universal donors, why ? **1+1+1=3**

(b) What is CSF ? Give any one biological function of CSF.

5. (a) What is meant by digestion of food ? Name the product of digestion of carbohydrates.

(b) Define hypo - cholesterolemia. List any two causes of hypo - cholesterolemia. **1+½+½+1=3**

OR

(a) Write the significance of Glucose Tolerance Test ? **1+2=3**

(b) Briefly describe the procedure of Glucose Tolerance Test.

6. Fill in the blanks with suitable words. 6x½=3

(a) _____ is the process of breakdown of native structure of proteins.

(b) _____ hardness of water cannot be removed by boiling.

(c) _____ is the amount of enzyme activity that converts 1 micromol of the substrate per minute under standard condition.

(d) The process involving copying of nucleotide sequence of DNA into a complementary sequence of mRNA is called _____ .

(e) The process of breaking down of glycogen into glucose phosphate or free glucose is called _____ .

(f) The breakdown of RBC's in hypotonic solution is called _____ .

PART - B
Biophysics

Attempt **all** questions. 3x2=6

1. Define the following terms with Two examples of each from nursing.

(a) Center of gravity

(b) Body Mechanics

(c) Application of air pressure

2. Explain how heat is lost from the body when you give cold sponge bath to patient with high fever. 6

3. Fill in the blanks : 1x5=5

(a) Rate of change of displacement with time is referred as _____ .

(b) The state of rest or uniform motion of body occurs due to _____ .

(c) Rate of change of velocity with time is called _____ .

(d) Newton's first law is also known as law of _____ .

(e) To every action there is always an equal and opposite reaction is explained in _____ law of Newton.

PART - C
Microbiology

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

1. Fill in the blanks : **6x½=3**

(a) Bacteria that grow only in the presence of oxygen are called as _____ .

(b) When all micro-organisms in a culture are of the same species, the culture is called _____ culture.

(c) The causative organism for pulmonary tuberculosis is _____.

(d) Sunlight, heat, cold, drying are examples of _____ agents.

(e) A condition that attacks many people at the same time but has high mortality is called as _____ .

(f) An organism which derives its nourishment at the cost of another organism is called as a _____ .

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

(a) Ribosomes

(b) Mycosis

(c) Incubation Period

(d) Antibiotic

(e) Scab

(f) Immunity

3. (a) List the types of Gram Positive bacteria.

(b) Enumerate the diseases caused by Staphylococci. **1+2+1=4**

(c) List the bacteriological investigation required.

4. List the salient features of Ascaris lumbricoides and explain its life cycle. **2+3=5**

5. Write short note on **any one** of the followings : **1x3=3**

(a) Mechanical barriers (first line of defence)

(b) Pathogenic Spirochaetes

(c) Hepatitis virus

PART - D

Nutrition and Dietetics

Attempt **all** questions :

1. (a) Classify the food into groups based on their functions and list two examples for each food group. **3+2=5**

(b) Enumerate the steps you will follow in planning balanced diet.

2. List any four disorders of Gastrointestinal tract and write dietary management for each. **1+4=5**

3. List any two conditions resulting from vitamin B complex deficiencies and their symptoms. Write the food sources you may recommend in each condition. **1+2+2=5**

4. Match the following statements in **Column-A** with the terms in **Column-B**. **2x1=2**

	Column - A		**Column - B**
(a)	Protein of good quality and restriction of salt	(i)	Heart conditions
(b)	Increase intake of fibre and fluid	(ii)	Diabetes
		(iii)	Toxaemia
		(iv)	Anaemia
		(v)	Constipation