

POST BASIC
BACHELOR OF SCIENCE (NURSING)
B.Sc. (N) (PB)

Term-End Examination 00185

June, 2017

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 :*

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|---|---|-----------------|
| <i>Part A : Biochemistry</i> | - | <i>18 marks</i> |
| <i>Part B : Biophysics</i> | - | <i>17 marks</i> |
| <i>Part C : Microbiology</i> | - | <i>18 marks</i> |
| <i>Part D : Nutrition and Dietetics</i> | - | <i>17 marks</i> |
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 six questions. Choice is internal.
Each question carries **3** marks.

1. (a) Distinguish between Mixtures and Compounds. 2
(b) Indicate whether the following are mixtures or compounds. 1
(i) Sugar added to water
(ii) Table salt
2. (a) Why is knowledge of Biochemistry important for Nursing Profession? 2
(b) Name the important biomolecule present in pulses and salt. 1

OR

- Distinguish between hypertonic, isotonic and hypotonic solutions. 3
3. Write a brief note on "The A B O system" of blood grouping. 3
 4. (a) Distinguish between Glycogenesis and Glycogenolysis. 2
(b) State an important function of Cholesterol. 1
 5. (a) What are Lipids? Give one example. 1½
(b) List any three functions of Lipids. 1½

OR

- (a) Define 'Proteins'. What is meant by 'denaturation'? 2
- (b) Write any two functions of proteins. 1

6. Give the meaning of the following keywords, in one sentence. 3
- (a) Serum
 - (b) Saponification
 - (c) Interstitial fluid
 - (d) Glycosuria
 - (e) Anabolism
 - (f) Antibody

PART - B
(Biophysics)

Attempt All questions.

1. Explain Systematic Error in Measurement. Support your answer with an example. 2+1=3
2. (a) Define centre of gravity of human body. 1+2=3
(b) Explain, why a nurse should carry a filled basin with hands as close to the body as possible.
3. Explain the mechanism of heat production and heat loss to maintain body temperature of human beings. 3
4. Briefly discuss the process of defibrillation. 3
5. Fill in the blanks in the following statements. $\frac{1}{2} \times 5 = 2\frac{1}{2}$
- (a) The temperature at which the vapour pressure of liquid is equal to atmospheric pressure is called _____ point.
 - (b) The blood vessels in which blood flows at a high pressure are _____.

- (c) Visible light is composed of seven colours which are abbreviated as _____.
 - (d) A normal eye focuses near as well as infinitely far objects on the _____.
 - (e) Various forms of an element having same atomic number but different mass number are called _____.
6. Read the following statement carefully and write 'T' if the statement is true and 'F' if it is false. $\frac{1}{2} \times 5 = 2\frac{1}{2}$
- (a) A device to move the liquid from lower level to upper level is known as siphon.
 - (b) Radio-sodium is used to detect constriction in blood vessels.
 - (c) Dry air, rubber and glass are good conductors of electricity.
 - (d) Specific gravity of blood decreases in anaemia.
 - (e) The increase in frequency of sound, lowers its shrill.

PART - C

(Microbiology)

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

- 1. List the factors influencing growth of Bacteria. 4
- 2. (a) Define culture and culture medium. 2+1=3
(b) How is culture obtained in the laboratory ?
- 3. (a) Name the virus which causes AIDS. 1+2=3
(b) How will you control viral diseases ?

4. Define the following. 1x4=4
- (a) Epidemic
 - (b) Vaccines
 - (c) Allergens
 - (d) Toxoid
5. Write T if the statement is True and F if the statement is False in your answer sheet. 1x4=4
- (a) Bacteriolysin is an agent which causes destruction/disintegration of bacteria.
 - (b) Entamoeba causes diarrhoea.
 - (c) Differential stains are used for differentiating one type of organism from the other or parts of bacterial cells.
 - (d) Culture media must be acidic in reaction.

PART - D

(Nutrition and Dietetics)

Attempt **all** questions. Attempt at separate answer script.

1. (a) Discuss the use of recommended dietary intakes of nutrients planning balanced diet. 2+2=4
- (b) Enumerate four major steps in planning balanced diet.
2. (a) Define parenteral feeding and enumerate its indications. 2+2=4
- (b) Discuss the types of parenteral feeding with one example for each.

3. Describe **any three** of the following : 3x3=9

- (a) How will you plan a diet for patient ?
 - (b) Dietary management during two common problems of large intestine.
 - (c) Specific nutritional intervention required in relation to protein in Chronic Renal Failure.
 - (d) Food as therapy.
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