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BNS-102

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

01953

June, 2019

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. Choices are internal. Each question carries 3 marks.*

1. (a) Differentiate between a mixture and a compound. *2*

(b) Why is the knowledge of Biochemistry important for nurses ? *1*

2. (a) What is a 'Buffer Solution' ? *1*

(b) Describe in brief the concept of pH. *2*

3. (a) Why are essential amino acids called essential ? *1*

(b) Explain the nomenclature of enzymes based on the type of reaction they catalyse. *2*

OR

(a) Distinguish between Glycogenesis and Glycogenolysis. *1*

(b) What is the role of kidney in controlling glucose level ? *2*

4. (a) What is meant by Ketonaemia ? *1*

(b) Write any two functions of cholesterol in the body. *2*

OR

(a) Explain the formation of a "peptide bond". *2*

(b) Write any two functions of proteins. *1*

5. (a) Why is DNA called the genetic material ? *1*

(b) What are lipoproteins and where are these found in a living cell ? *2*

6. Define any ***three*** of the following keywords, in one sentence each : *3×1=3*

(a) Saponification

(b) Antibody

(c) Osteoporosis

(d) Denaturation

(e) Isotonic solution

PART B

(Biophysics)

*Answer **all** questions.*

7. What is the unit of time ? Explain the basis for this unit. *2*

8. "During blood transfusion, blood flows from the hanging bag to a patient's body." What force makes it possible to flow ? *1*

9. State the use of microscope in Medicine. *1*

10. State the law of conservation of energy. Explain the mechanism of conservation of energy in our body. *2*

11. Explain the mechanism of heat loss from the body with the help of an example in medical nursing. *2*

12. Explain the phenomena of power of accommodation of eye lens. *1*

13. What is diathermy ? *1*

14. Explain the mechanism of ultrasound diathermy in the treatment of joint diseases and joint stiffness. *2*

15. Fill in the blanks : *5×1=5*

(a) When we breathe in, the pressure in the lungs is _____ than atmospheric pressure.

(b) A pair of scissors is an example of class _____ lever.

(c) Refraction of light plays an important role in focussing images on the _____ of the eye.

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

(e) A person carrying a bucket full of water in the left hand leans towards _____.

PART C

(Microbiology)

*Answer **all** questions.*

16. Explain the use of moist heat as a method of destruction of microbes. *5*

17. Differentiate between the following terms : *4×2=8*

(a) Antigen and Antibody

(b) Cross infection and Nosocomial infection

(c) Vaccine and Vaccination

(d) Allergy and Allergens

18. Fill in the blanks : *5×1=5*

(a) The organism which causes tuberculosis is called _____.

(b) Leprosy is caused by a bacillus _____ .

(c) Cholera is caused by _____ bacillus.

(d) Ability of an organism to cause infection is called _____.

(e) Human diseases caused by fungi are known as _____ .

PART D

(Nutrition and Dietetics)

*Attempt **all** questions.*

19. (a) Define Balanced Diet.

(b) Discuss the steps in planning a balanced diet. *2+4=6*

20. (a) List the methods/ways of nutritional assessment.

(b) Explain any one method of nutritional assessment. *2+3=5*

21. Discuss the dietary management of a patient with diarrhoea. *3*

22. Describe various food sanitation measures to prevent food illness. *3*