



9. Oxytocin differs from vasopressin by two amino acids located at ..... and ..... positions.  
a. 3, 8                      b. 2, 8                      c. 1,4                      d. 5,8
10. Suitable inactivating agent for Quaternary ammonium compounds is.....  
a. PABA                      b. thiosulphate                      c. Polysorbate 80                      d. dilution
11. For sterilization via membrane filtration, the nominal pore diameter of membrane filter should be ..... $\mu$ m.  
a. 0.2                      b. 0.35                      c. 0.45                      d. 2
12. Which of the following mechanism is involved in cell death in dry heat sterilization?  
a. Protein denaturation                      b. Rise in pH level  
c. Decrease in pH level                      d. Decreased level of electrolyte
13. Which among the following products is **NOT** an example of sterile product?  
a. Irrigating solutions                      b. Live attenuated virus vaccine  
c. Water for injection                      d. Ophthalmic solutions
14. Which among the following pharmaceutical product, Direct inoculation method is most suitable for sterility test?  
a. Dialysis fluids                      b. Multiple dose IV injections  
c. Syringes                      d. Irrigating solutions
15. Measles, mumps and rubella vaccine BP (MMR) is an example of ..... vaccine.  
a. Conjugate                      b. Mixed                      c. Subunit                      d. None
16. Antibodies administered to patient that is produced in animals gives  
a. Naturally acquired active immunity                      b. Artificially acquired active immunity  
c. Naturally acquired passive immunity                      d. Artificially acquired passive immunity
17. In schick test, immune individual shows.....to schick toxin..... reaction to schick control.  
a. + ve, -ve.                      b. + ve, +ve.                      c. - ve, -ve.                      d. Both a and b.
18. Which among the following is alcohol-based preservative?  
a. Isopropanol                      b. Chlorbutanol                      c. Chloroxyleneol                      d. Methyl paraben
19. Which of the following microorganism is **NOT** recommended by FDA for use-dilution test?  
a. *Pseudomonas aeruginosa*                      b. *Salmonella enterica*  
c. *Staphylococcus aureus*                      d. *Escherichia coli*
20. Which of the following is an example of physical spoilage of product?  
a. Transmission of disease  
b. Destruction of penicillin by penicillinases  
c. Color change  
d. Prednisolone degradation by *asperigillus spp.*

KATHMANDU UNIVERSITY  
End Semester Examination  
May/June, 2022

Level : B.Pharm.  
Year : III  
Time : 2 hrs. 30 mins.

Course : PHAR 313  
Semester : II  
F.M. : 55

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SECTION "B"  
[5 Q. × 3 = 15 marks]

Attempt *ANY FIVE* questions.

1. Describe about the types of lactic acid bacteria with examples. Mention the organism used in commercial production of lactic acid using corn-dextrose media.
2. What is insulin analog? List down rapid acting and long acting insulin analogs.
3. What is a glandular product? Write about pepsin.
4. What is a blood substitute? Describe any one of plasma substitute.
5. What should be the storage conditions of immunological products? Why?
6. Why are preservatives added in pharmaceutical products? Give your reasons.
7. Why are inactivating agents added during sterility testing? Explain with suitable examples.

SECTION "C"  
[5 Q. × 5 = 25 marks]

Attempt *ANY FIVE* questions.

8. Write short notes on:
  - a. Human plasma protein fraction
  - b. Concentrated platelets
9. Write about the preparation of glandular products.
10. How solid liquid separation and cell disruption are done during downstream processing of fermentation product?
11. What are mRNA vaccines? How does it work?
12. What are sterilization indicators? Write about its types.
13. Why are positive and negative controls used in sterility testing? Explain.
14. "Phenol coefficient of antimicrobial chemical agent X is 2", what does this mean?

SECTION "D"  
[2 Q. × 7.5 = 15 marks]

Attempt *ANY TWO* questions.

15. Explain in detail about the process of penicillin production by fermentation.
16. Write in detail about the preparation procedure of bacterial vaccine.
17. What are the advantages and disadvantages of gaseous sterilization method over other sterilization methods. Write in detail about sterilization process of ethylene oxide sterilizer.