KATHMANDU UNIVERSITY
End Semester Examination
January/February 2024

Marks Scored:

Level : B.Pharm.
Year : II

08 FEB 2024

Course : PHAR 221
Semester : II

Exam Roll No. :

Time: 30 mins.

F. M. : 20

Registration No.:

Date :

SECTION "A"

[20Q. × 1 = 20 marks]

Choose and encircle the most appropriate option from each set of choices.

1. Which of the following is a common side effect associated with magnesium-containing antacids?
   a. Constipation b. Diarrhea c. Weight gain d. Insomnia

2. Calamine lotion is often pink due to the presence of:
   a. Iron Oxide b. Copper Sulfate c. Titanium Dioxide d. Aluminum Hydroxide

3. Which of the following is a common oxidation state for transition metals?
   a. +8 b. -1 c. +2 d. -3

4. Which isotopes are commonly used in nuclear medicine for diagnostic imaging?
   a. Carbon-14 b. Hydrogen-1 c. Technetium-99m d. Uranium-235

5. The conversion factor between the traditional unit Curie (Ci) and the SI unit Becquerel (Bq) is:
   a. 1 Ci = 1 Bq
   b. 1 Ci = 3.7×10^{10} Bq
   c. 1 Ci = 1×10^{3} Bq
   d. 1 Ci = 1×10^{6} Bq

6. Which of the following statements regarding antioxidants in pharmaceuticals is **TRUE**?
   a. They always work by promoting oxidative stress.
   b. They are only effective against certain types of free radicals.
   c. Their efficacy is due to their ability to neutralize free radicals and inhibit oxidative damage.
   d. They have no impact on drug stability.

7. What is the significance of the term "Type I glass" in pharmaceutical packaging standards?
   a. It refers to colored glass.
   b. It indicates borosilicate glass with high hydrolytic resistance.
   c. It represents glass with low chemical stability.
   d. It denotes glass with poor transparency.

8. Intravenous administration of sodium thiosulfate in cyanide poisoning aims to promote the formation of:
   a. Thiocyanate b. Cyanocobalamin c. Thiosulfate d. Cyanate

9. What is the endpoint indicator commonly used in iodometric titrations?
   a. Phenolphthalein
   b. Methyl orange
   c. Bromothymol blue
   d. Starch

10. What is the official compound of iron commonly used in pharmaceutical formulations?
a. Iron sulfate b. Iron oxide c. Ferrous sulfate d. Ferric chloride

11. What is the primary purpose of a limit test in pharmaceutical analysis?
a. Quantitative determination
b. Identification of impurities
c. Stability testing
d. Microbial contamination testing

12. In the limit test for iron, the formation of a reddish-brown precipitate indicates the presence of iron. What reagent is responsible for this reaction?
a. Potassium iodide
b. Sodium hydroxide
c. Hydrochloric acid
d. Ammonium thiocyanate

13. In the reagent commonly used for the limit test of sulphates, which salt is present and contributes to the formation of the precipitate?
a. Potassium chloride
b. Potassium sulfate
c. Sodium chloride
d. Sodium sulfate

14. What is the molecular formula of talc?
a. $3MgO.\ 2SiO_2.\ NaOH$
b. $3MgO.\ 4SiO_2.\ H_2O$
c. $3MgO.\ CaCO_3.\ H_2O$
d. $4MgO.\ ZnO.\ H_2O$

15. Which of the following properties makes light kaolin suitable for medicinal and cosmetic applications?
a. Absorbent properties
b. High electrical conductivity
c. High melting point
d. Transparency

16. What is the normal pH range of blood in the human body?
a. 6.0 - 6.5 b. 7.2 - 7.4 c. 7.5 - 7.9 d. 8.0 - 8.5

17. The active ingredient in Epsom salt, magnesium sulfate, primarily acts by:
a. Increasing water absorption in the colon
b. Stimulating peristalsis
c. Inhibiting bacterial growth
d. Neutralizing stomach acid

18. In the context of sunscreens, zinc oxide is known for its:
a. UV-absorbing properties
b. Water repellency
c. Fragrance
d. Antioxidant properties

19. Which of the following ions is not typically present in the composition of Ringer Lactate?
a. Sodium b. Potassium c. Chloride d. Magnesium

20. What role does glucose play in ORS?
a. Acts as a preservative
b. Enhances the taste
c. Facilitates the absorption of sodium and water in the intestines
d. Neutralizes acidity

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SECTION "B"
[5 Q. × 3 = 15 marks]

Attempt *ANY FIVE* questions.

1. Give the identification test for carbonate and ferric salts.

2. Why is there a requirement for the use of combination antacid preparations?

3. Define cathartics. Discuss about sodium potassium tartrate. [1+2]

4. Give brief account on calamine.

5. Which apparatus is utilized to carry out the limit test for arsenic, and draw a well-labeled diagram of the apparatus? [1+2]

6. Write short note on [2Q × 1.5= 3]
   a. Monograph
   b. Pharmaceutical glass

7. Enumerate the primary functions of physiological ions potassium, bicarbonate, and calcium. [1+1+1]

SECTION "C"
[5 Q. × 5 = 25 marks]

Attempt *ANY FIVE* questions.

8. Define the term Becquerel and Curie. Differentiate between alpha, beta, and gamma rays. [1+4]

9. What is antidote? Classify them. Explain the action of sodium nitrite as an antidote in cyanide poisoning. [1+2+2]

10. What is the purpose of the limit test? Discuss the principle involved in the limit test of iron. [2+3]

11. Write in detail the preparation, properties, assay, identification test and uses of oxygen.

12. Define Expectorants? Discuss the preparation, properties, and uses of Ammonium chloride. [1+4]

13. Discuss in brief about the electrolyte replacement therapy and composition of oral rehydration salt. [3+2]

14. What are antimicrobials. Discuss about the solutions of iodine and povidone iodine solution. [1+4]

SECTION "D"

[2 Q. × 7.5 = 15 marks]

Attempt *ANY TWO* questions.

15. What are Antacids? Classify based on the nature of antacid properties. List the criteria for good antacid. Describe in detail about Magnesium containing antacids. [1+2+4.5]

16. What is radio pharmaceuticals. Give the ideal properties of radio pharmaceuticals. Mention about the storage and handling about radio pharmaceuticals. Write the use of each radio pharmaceuticals: Cobalt 60, Gold 198, Iodine131. [1+2+3+1.5]

17. What are pharmaceutical impurities. Illustrate the different sources of impurities in pharmaceuticals with example. [1.5+6]