JHARKHAND Rai University RANCHI ACCREDITED BY NAAC

End Semester/Reappear (Semester 1) Examination March 2022

Programme: B. Pharm **Full Marks: 75**
Subject: Pharmaceutical Inorganic Chemistry **Time: 3 Hrs.**
Subject Code: BP104T
Enrollment No: _____

Section I

1. **Objective type questions. Answer all questions.** **20 x 1 = 20**

i. _____ water if free from organic impurities.
a. Tap water b. Demineralized water c. Distilled water d. None of above

ii. One of following is true for limit test
a. It semi-quantitative method
b. Designed to identify small quantities of impurities
c. Designed to control small quantities of impurities
d. All of above

iii. Potassium cyanide is used in limit test of
a. Iron b. Lead c. Heavy metals d. Arsenic

iv. One of the following limit tests is based on comparison of color.
a. Limit test of sulphate c. Limit test of chloride
b. Limit test of iron d. For both a & c

v. Which of the following is an example of amphoteric molecule?
a. Acetic acid b. Malic acid c. Sugars d. Water

vi. Carbonic acid and bicarbonate ions buffer which of the following?
a. Cytosol b. Cytoplasm c. Blood d. Lymph

vii. Calcium levulinate is used as calcium replenisher, chemically it is
a. calcium-2-oxo pentanoate dehydrate c. calcium-3-oxo pentanoate dehydrate
b. calcium-4-oxo pentanoate dehydrate d. calcium-5-oxo pentanoate dehydrate

viii. Which vitamin is necessary for proper tooth formation?
a. Vitamin A b. Vitamin D c. Vitamin C d. All of the above

ix. A solution of zinc chloride 1% and zinc sulphate 2% is been used as
a. Astringent mouthwash b. toothpaste c. polishing agents d. whitening agent

x. $Al(OH)_3$ gel is used in
a. Dentifrices b. Radioactivity agent c. Peptic ulcer d. all of the above

xi. Side effects of Ca containing antacid.
a. Renal failure b. Mille alkali syndromes c. Hyperphosphatemia d. All of the above

xii. Molecular formula of Blue vitriol is.
a. $CuSO_4.5H_2O$ b. COSO. $5H_2O$ c. $FeSO_4.5H_2O$ d. $Na_2SO_4.5H_2O$

xiii. One of the following is not a haematinic
a. Iron b. Folic acid c. Vitamin B_{12} d. Vitamin B_2

xiv. Alum is prepared from
a. Potassium sulphate and aluminum sulphate c. Potassium chloride and aluminum sulphate
b. Potassium sulphate and aluminum chloride d. Potassium carbonate and aluminum sulphate

xv. What are the product A and B in following reaction
a. $2Na_2CO_3 + 4\ NO + O_2 \longrightarrow$ A and B c. 3 $NaNO_2$ and 2 CO_2
b. 4 $NaNO_2$ and 2 CO_2 d. 2 $NaNO_2$ and 3 CO_2 e. 2 $NaNO_2$ and 2 CO_2

xvi. One of the following is a protein precipitant.
a. Activated charcoal b. $ZnSO_4$ c. $FeSO_4$ d. $NaNO_2$

xvii. 1 Becqurel is equivalent to
a. 2.7×10^{-11} curie b. 2.7×10^{-10} curie c. 2.7×10^{-8} curie d. 2.7×10^{-5} curie

xviii. $_{88}Ra^{226} \longrightarrow {}_{86}Rn^{222} + \_\_\_\_$
a. α b. β c. α + ß d. γ

xix. _____ is used for the measurement of absorption of vitamin B12 in the diagnosis of pernacious anaemia.
a. Co^{57} and Co^{58} b. Co^{59} and Co^{60} c. Co^{58} d. Co^{57}

xx. _____ is not an isotope of hydrogen.
a. $_1H^1$ b. $_1H^2$ c. $_1H^3$ d. None of above

2. **Fill in the blanks** **5 x 1 = 5**
   a. The most dangerous radiation released by radioactive materials is _____.
   b. The point at which indicator shows color change is called _____.
   c. The chemical name of lime water is _____.
   d. An effective antacid contains _____.
   e. Composite has_____.

Section II

3. **Short Answer type questions. Answer any five.** **5 x 4 = 20**
   a. Explain the diagnostic and therapeutic applications of radioisotopes in detail.
   b. How many moles of sodium acetate and acetic acid must you use to prepare 1.00 L of a 0.100 mol/L buffer with pH 5.00?
   c. Write note on the following
      i. Protectives and Astringents
      ii. Respiratory Stimulants and Anasthetic Gases
   d. Describe the method of preparation, properties and uses of the following:
      i. Magnesium trisilicate, I. P.
      ii. Zinc oxide, I.P.
   e. Discuss the physiological importance of Iron. Explain the biological importance of chloride and potassium.
   f. What are anti-microbial? Give the method of preparation and principle in the assay of chlorinated lime.

Section III

Long Answer type questions. Answer any three. **3 x 10 = 30**

4. What is impurity? Describe the source of impurities in pharmaceutical substances.
5. a. A buffer solution is made from 0.4M CH_3COOH and 0.6M CH_3COO^-. If the acid dissociation constant of CH_3COOH is 1.8×10^{-5}, what is the pH of the buffer solution? [7]
   b. Define Isotonic Solutions. How it is measured? [3]
6. a. Describe the principle involved and method employed in the limit test of arsenic in drugs.
   b. Write a note on Oral Rehydration Formula (ORF).
7. a. Define and classify antidotes with examples. Write a note on activated charcoal.
   b. What is cyanide toxicity? What the symptoms and treatment are for cyanide poisoning?
8. Define expectorants? Give example and mechanism of action. Give the method of assay of anyone expectorant.

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