Name: Enrolment No:	UPES UNIVERSITY WITH A PURPOSE

UNIVERSITY OF PETROLEUM AND ENERGY STUDIES
End Semester Examination, December 2021

Course: Pharmaceutical Inorganic Chemistry **Semester: I**
Program: B. Pharm. **Time: 03 hrs.**
Course Code: BP104T **Max. Marks: 75**
Instructions: All the sections are compulsory.

SECTION A

1. Each Question will carry 1 Marks
2. Instruction: Select the correct answer(s), Answers all the 20 questions.

S. No.	Questions	CO
Q 1	**_____ are used as organic quenching agents in Geiger-Muller Counter for the measurement of radioactivity.** a) Methanol and chloroform b) Ethyl alcohol and ethyl formate c) Ethylene and methyl ester d) Ethanol and ethyl acetate	**CO2**
Q 2	**Solvay process is used for the preparation of** a) Sodium bicarbonate b) Hydrogen peroxide c) Chlorinated lime d) Aluminium hydroxide	**CO2**
Q 3	**Which one of the following redox indicators is also used as a purgative?** a) Methyl orange b) Phenol red c) Phenolphthalein d) Methyl red	**CO2**
Q 4	**Example of a natural product used as stimulant is** a) Glycerin b) Senna c) Methyl cellulose d) All of these	**CO1**
Q 5	**Achlorhydria occurs due to _____** a) Insufficient secretion of HCl b) Excessive secretion of HCl c) Both a and b d) Excessive secretion of Pepsin	**CO2**
Q 6	**Hydrogen peroxide is stable in _____** a) Acidic solution b) Alkaline solution c) Ammonia solution d) None of the above	**CO1**
Q 7	**Symptoms of hyperkalemia** a) bradycardia b) Diarrhea c) mental confusion d) both (a) and (c)	**CO2**
Q 8	**Buffer capacity is represented by** a) α sign b) β sign c) γ sign d) None of these	**CO2**

Q 9	**Iodine is readily dissolved in** a) Aqueous solution of Potassium iodide b) Water c) Aqueous solution of Sodium hydroxide d) All of the above	**CO1**
Q 10	**Sodium thiosulphate is used as an** a) Antacid b) Antimicrobial c) Antidote d) Expectorant	**CO2**
Q 11	**ORS therapy is required during** a) excess loss of water b) metabolic acidosis c) metabolic alkalosis d) All of these.	**CO2**
Q 12	**Which one of the following acid is used in the limit test for sulphur?** a) Hydrochloric acid b) Thioglycollic acid c) Nitric acid d) Barium chloride	**CO1**
Q 13	**The major storage of iron in body is** a) transferrin b) apoferritin c) ferritin d) none of these	**CO1**
Q 14	**You are presented with a solution that has a pOH of 2.13. What is the pH of this solution?** a) 2.13 b) 6.57 c) 11.87 d) None of these	**CO1**
Q 15	**An example of Lewis base is** a) NH3 b) BF3 c) both (a) and (b) d) NaOH	**CO1**
Q 16	**An example of amphoteric substance is** a) Al(OH)3 b) NaOH c) Ca(OH)2 d) None of these	**CO1**
Q 17	**_____ is used to prevent dental caries.** a) Sodium chloride b) sodium fluoride c) Potassium chloride d) stannous chloride	**CO2**
Q 18	**What is the pH for a 0.05M solution of hydrochloric acid?** a) 1.3 b) 0.05 c) 2.7 d) 1.7	**CO1**
Q 19	**An example of physiological buffer is** a) HCl b) Hemoglobin c) NH4OH d) All of these	**CO2**
Q 20	**The white precipitate of _____ formed in sulphate limit test.** a) Ferrous sulphate b) Barium chloride c) Barium sulphate d) none of these	**CO1**
SECTION B **1. Each question will carry 10 marks. Answer any two questions out of three questions.** **2. Instruction: Long Answer type questions**		

Q 1	a) Classify antacids with examples. (**3 marks**) b) Discuss the ideal properties of antacids. (**3 marks**) c) Why gel formation is required to administer aluminum hydroxide as an antacid? (**2 marks**) d) What are the chemicals required for making chewable tablet for antacid preparation? (**2 marks**)	**CO2**
Q 2	a) What are radiopharmaceuticals? (**2 marks**) b) Give an account of precautions to be taken while handling and storage of radiopharmaceuticals. (**4 marks**) c) Discuss the uses of Sodium iodide [I 131], Iron [Fe 59] and Cyanocobalamine [Co 57] for clinical applications. (**3 marks**) d) What is the function of Radio-opaque contrast media? (**1 marks**)	**CO2**
Q 3	a) Discuss the concepts of conjugate acid and base with examples. (**5 marks**) b) What are the limitations of Lewis theory concept? (**2 marks**) c) Write notes on Phosphate Buffer. (**3 marks**)	**CO1**

SECTION C

1. Each question will carry 5 marks. Answer any seven questions out of nine questions

2. Instruction: Short Answers type questions

		35
Q 1	Explain the different mechanism of actions of antidotes with proper examples.	**CO2**
Q 2	Write a short note of arsenic limit test.	**CO1**
Q 3	a) Prove that pH + pOH = 14. (**2 marks**) b) Calculate the pH of a buffer solution made from 0.30 mol/L $HC_2H_3O_2$ and 0.50 mol/L $C_2H_3O_2^-$. The acid dissociation constant of $HC_2H_3O_2$ is 1.8×10^{-5}. (**3 marks**)	**CO1**
Q 4	a) What is pharmacopeia? (**1 marks**) b) What are the contents required for writing a monograph for Active Pharmaceutical Ingredients (APIs)? (**4 marks**)	**CO2**
Q 5	Discuss different ways to determine pharmaceutical impurities.	**CO1**
Q 6	a) What do you mean by tooth decay? (**2 marks**) b) Write down the mechanism of action of sodium fluoride (NaF). (**3 marks**)	**CO2**
Q 7	a) Why glycoprotein transferrin (Tf) is crucial for iron utilization in human body? (**3 marks**) b) How the presence of food in stomach can affect the iron absorption? (**2 marks**)	**CO2**
Q 8	a) Write down the difference between α, β and γ rays based on the properties. (**3 marks**) b) What is radioactive decay? (**2 marks**)	**CO2**
Q 9	a) What do you mean by electrolyte replenisher? (**1 marks**) b) Write down the composition of ORS as per WHO formula. (**4 marks**)	**CO1**