Name: **Enrolment No:**	

UPES

End Semester Examination, December 2023

Course: Pharmaceutical Analysis-I **Semester : Ist**

Program: B. Pharm **Duration : 03 Hours**

Course Code: BP102T **Max. Marks: 75**

Instructions:

SECTION A

(20Qx1M=20 Marks)

S. No.		Marks	COs
	Objective/ Multiple Choice Questions (20X1)		
Q1.	A Molar solution is one which contains…… A. gram molecular weight/L. B. gram molecular weight/Kg. C. gram equivalent weight/L. D. gram equivalent weight/kg.	**1**	**CO1**
Q2.	2 gm NaOH in 500 ml ……. A. 0.1N B. 1N C.0.5N D. 0.05N	**1**	**CO1**
Q3.	8.5 ml of HCl in 1Litre is…… A. 1M B. 0.1M C. 0.01M D. 0.5M	**1**	**CO1**
Q4.	When expressing the concentration of a solution in parts per million (ppm), what does "1 ppm" mean? A. 1 gram of solute in 1,000 milliliters of solvent B. 1 milligram of solute in 1,000 milliliters of solvent C. 1 milligram of solute in 100 milliliters of solvent D. 1 gram of solute in 100 milliliters of solvent	**1**	**CO1**
Q5.	Gutzeit apparatus is used in limit test of…….. A. Arsenic. B. Lead. C. Iron. D. Chlorine.	**1**	**CO1**
Q6.	Phenolphthalein has a pH range of……. A. 6.8-8.4 B. 1.2-2.8	**1**	**CO2**

	C. 8.3-11 D. 4.2-6.3		
Q7.	Which theory explain the behaviour of indicator? A. Chromospere B. Ionic C. color D. Resonance	**1**	**CO2**
Q8.	Example of protogenic solvent is……. A. Sulphuric acid. B. Sodium hydroxide. C. Sodium methoxide. D. all of the above.	**1**	**CO2**
Q9.	Thymol blue is choice of indicator in titration of…… A. strong acid vs strong base. B. weak acid vs strong base. C. strong acid vs weak base. D. weak acid vs weak base.	**1**	**CO2**
Q10.	Potassium chromate is used as indicator in……. A. Volhard's Method. B. Fazan's Method. C. Mohr's Method. D. None.	**1**	**CO3**
Q11.	AgCl has to be filtered off before titration using…….. A. Modified Volhard's Method. B. Fazan's Method. C. Mohr's Method. D. None.	**1**	**CO3**
Q12.	Complexing agent is? A. Electron donating ions B. Electron accepting ions C. A and B D. None of the above	**1**	**CO3**
Q13.	Which sentence is false about gravimetric analysis? A. It is used for inorganic ion B. It is used to assay barium sulphate C. It is used to assay of aluminum D. Relative precision 3 to 4%	**1**	**CO3**
Q14.	In Diazotization Titration ……..is used as titrant A. Potassium permanganate ($KMnO_4$) B. Sodium nitrite ($NaNO_2$) C. Potassium dichromate ($K_2Cr_2O_7$) D. Sodium hydroxide (NaOH)	**1**	**CO3**
Q15.	----------is used as self-indicator A. Potassium permanganate ($KMnO_4$)	**1**	**CO4**

	B. Sodium thiosulfate ($Na_2S_2O_3$) C. Potassium dichromate ($K_2Cr_2O_7$) D. Sodium hydroxide (NaOH)		
Q16.	Dichrometry is a redox titration technique. What is commonly used as the titrant in dichrometry? A. Potassium dichromate (K2Cr2O7) B. Potassium iodide (KI) C. Sodium thiosulfate (Na2S2O3) D. Bromine (Br2)	**1**	**CO4**
Q17.	How is the electrical conductivity of a solution related to the concentration of ions? A. It is inversely proportional to ion concentration. B. It is directly proportional to ion concentration. C. It is unrelated to ion concentration. D. It is exponentially related to ion concentration.	**1**	**CO5**
Q18.	In polarography, what is the purpose of the dropping mercury electrode (DME)? A. To measure voltage B. To maintain a constant potential C. To generate electrical resistance D. To generate a mercury drop for the electrode	**1**	**CO5**
Q19.	Which equation is commonly used in polarography to describe the relationship between current and voltage? A. Ohm's law B. Nernst equation C. Faraday's law D. Ilkovic equation	**1**	**CO5**
Q20.	The potential of the saturated calomel electrode (SCE) is ……..V at 25 ^{o} C A. -1.23 V B. +0.2444 V C. +1.23 V D. +0.0592 V	**1**	**CO5**
SECTION B (20 Marks) **(2Qx10M=20 Marks)** **Attempt 2 Question out of 3**			
	Long Answers		
Q1.	Discuss the pH indicators. Explain Ostwald and Quinoid theories of indicators with relevant examples	**10**	**CO2**
Q2.	State the titration technique used for determination of hardness of water. Explain masking and demasking agent to estimate specific ions selectively in complexometric titration.	**10**	**CO3**
Q3.	Enlist the factors affecting conductivity? Explain principle, instrumentation and applications of conductometry.	**10**	**CO5**
SECTION-C (35 Marks)			

(7Qx5M=35 Marks) Attempt 7 Question out of 9			
	Short Answers		
Q1.	Elaborate the different sources of impurities in medicinal agents.	**5**	**CO1**
Q2.	Define neutralization curve? Sketch the neutralization curve for weak acid and strong base (Titrant).	**5**	**CO2**
Q3.	Explain levelling and differentiating effect in nonaqueous titration.	**5**	**CO2**
Q4.	Explain the procedure for carrying out diazotization titration.	**5**	**CO3**
Q5.	Describe the method to prepare and standardize 0.05M disodium edetate solution.	**5**	**CO3**
Q6.	Discuss the different steps involved in gravimetric analysis?	**5**	**CO3**
Q7.	Classify redox indicators with examples.	**5**	**CO4**
Q8.	Discuss different indicator and reference electrode used in potentiometry.	**5**	**CO5**
Q9.	Illustrate Nernst equation with its various notations.	**5**	**CO5**