Total No. of Questions: 3 *Total No. of Printed Pages:2*

Enrollment No.....

Faculty of Pharmacy

End Sem (Odd) Examination Dec-2019

PY3CO02 Pharmaceutical Analysis- I

Programme: B. Pharma Branch/Specialisation: Pharmacy

Duration: 3 Hrs. **Maximum Marks: 75**

Note: All questions are compulsory. Internal choices, if any, are indicated.

Q.1	i.	Write two different types of acid with example.	**2**
	ii.	Define precision.	**2**
	iii.	Write any two reaction of acid base titration.	**2**
	iv.	Define protogenic solvents with examples.	**2**
	v.	Give any two examples of precipitation titration.	**2**
	vi.	Write four different uses of potassium chromate.	**2**
	vii.	Give four names of different titrant in redox titration.	**2**
	viii.	Define oxidation.	**2**
	ix.	Define conductance.	**2**
	x.	Write names of any two reference electrodes.	**2**
Q.2		Attempt any two:	
	i.	Explain types of errors in details with methods to minimize the errors with suitable examples.	**10**
	ii.	Define Acid & Base. Explain neutralization curve of strong acid Vs strong base and strong acid versus weak base.	**10**
	iii.	(a) Define Primary and secondary standards with suitable examples	**5**
		(b) Give the assay procedure of sodium benzoate and ephedrine hydrochloride.	**5**
Q.3		Attempt any seven: Two questions from each section is compulsory.	
		Section - A	
	i.	Define Precipitation. Explain Mohr's method in details.	**5**

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	ii.	Explain principle and steps involved in gravimetric analysis.	**5**
	iii.	Explain Complexometric titration with a note on metal ion indicators.	**5**
		Section - B	
	iv.	Explain redox titration along with steps and example.	**5**
	v.	Give preparation and standardization of 0.1 N $KMnO_4$.	**5**
	vi.	Give preparation and standardization of 0.1 M Sodium thiosulphate	**5**
		Section - C	
	vii.	Explain the construction of Electrochemical cell with working of standard hydrogen electrode.	**5**
	viii.	State ohms law and explain measurement of conductance.	**5**
	ix.	Explain construction and working of dropping mercury electrode.	**5**

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Marking Scheme
PY3CO02 Pharmaceutical Analysis- I

Q.1	i.	Two different types of acid with example 1 mark for each with example	(1 mark * 2)	**2**
	ii.	Definition of precision.		**2**
	iii.	Any two reaction of acid base titration. 1 mark for each	(1 mark * 2)	**2**
	iv.	Definition of protogenic solvents with examples.		**2**
	v.	Any two examples of precipitation titration. 1 mark for each	(1 mark * 2)	**2**
	vi.	Four different uses of potassium chromate 0.5 mark for each	(0.5 mark * 4)	**2**
	vii.	Four names of different titrant in redox titration. 0.5 mark for each	(0.5 mark * 4)	**2**
	viii.	Definition of oxidation.		**2**
	ix.	Definition of conductance.		**2**
	x.	Names of any two reference electrodes. 1 mark for each	(1 mark * 2)	**2**

Q.2		Attempt any two:		
	i.	Systemic errors	2 marks	**10**
		Systemic errors	2 marks	
		Methods to minimize the errors with examples	6 marks	
	ii.	Definition of Acid & Base	2 marks	**10**
		Neutralization curve of strong acid Vs strong base	4 marks	
		Neutralization curve of strong acid Vs weak base	4 marks	
	iii.	(a) Primary standards	2.5 marks	**5**
		Secondary standards	2.5 marks	
		(b) Assay procedure of sodium benzoate	2.5 marks	**5**
		Assay procedure of ephedrine hydrochloride	2.5 marks	

Q.3		Attempt any seven: Two questions from each section is compulsory.		
		Section - A		
	i.	Definition of Precipitation	1 mark	**5**
		Mohr's method	4 marks	
	ii.	Principle gravimetric analysis	1 mark	**5**
		Steps involved in gravimetric analysis	4 marks	
	iii.	Complexometric titration	1 mark	**5**
		Metal ion indicators	4 marks	
		Section - B		
	iv.	Redox titration definition	2 marks	**5**
		Steps and example	3 marks	
	v.	Preparation of 0.1 N $KMnO_4$.	2 marks	**5**
		Standardization of 0.1 N $KMnO_4$.	3 marks	
	vi.	Preparation 0.1 M Sodium thiosulphate	2 marks	**5**
		Standardization of 0.1 M Sodium thiosulphate	3 marks	
		Section - C		
	vii.	Construction of Electrochemical cell	2.5 marks	**5**
		Working of standard hydrogen electrode	2.5 marks	
	viii.	Statement of ohms law	2 marks	**5**
		Measurement of conductance	3 marks	
	ix.	Construction of dropping mercury electrode	2.5 marks	**5**
		Working of dropping mercury electrode	2.5 marks	

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