



# Sanjay Ghodawat University, Kolhapur

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2017-18

FY M Sc

School of Sciences | Department of Chemistry

Analytical Chemistry - II

Sem-II

CHS 508

29 May 2019

June 2018

10:30 AM to 1:30 PM

Examination: ESE - II, Max Marks: 100, Time 3 Hr

Instructions:

1) All Questions are compulsory.

	Marks	CO
Q.1 Short answer (each one mark)	10	
1. Who discovered polarography?		CO1
2. Write down Ilkovic equation.		CO1
3. Which electrodes are used in amperometry?		CO1
4. Define electrogravimetry.		CO1
5. Mention the factors affecting current voltage curve.		CO1
6. Give the names of the detector used in colorimeter.		CO2
7. Which detector in colorimeter consists of dynodes?		CO2
8. Give names of the monochromator used in colorimeter.		CO2
9. Which source is used in colorimeter?		CO2
10. Define thermogravimetry analysis (TG).		CO2
Q.2 a) Solve the following (Eight marks)	20	
i) Discuss in detail instrumentation of polarography.	8	CO1
OR		
ii) Derive the equation for half wave potential.	8	CO1

b) i)	Explain in detail instrumentation of TGA	8	CO2
	OR		
	ii) Give the principle and instrumentation of double beam spectrophotometer.		CO2
c)	Solve the following (Four Marks)	4	
	i) Dilution method of colorimetric analysis		CO2
Q.3	Write note on any four (Five mark each)	20	
a)	Dead stop point method.		CO1
b)	Applications of amperometry.		CO1
c)	Factors affecting overpotential.		CO1
d)	Brief account on Differential thermal analysis (DTA)		CO2
e)	Applications of TGA		CO2
Q.4	Short answer (each one mark)	10	
1.	State Moore's law.		CO3
2.	Who coined the term nanotechnology?		CO3
3.	What is the long form of JCPDS?		CO3
4.	How the nanomaterials are classified?		CO3
5.	What is the famous lecture delivered by Richard Feynman?		CO3
6.	Who invented AAS?		CO4
7.	Which flame used in atomization process in AAS?		CO4
8.	Which detector used in AAS?		CO4
9.	What is mean by plasma in ICP?		CO4
10.	What is temperature range of plasma?		CO4

Q.5	a)	Solve the following (Eight marks)	20	
		i) Explain principle and instrumentation of XRD in detail.	8	CO3
		OR		
		ii) What are the applications of nanomaterial's in health sector?	8	CO3
	b)	i) Explain the instrumentation of atomic absorption spectroscopy (AAS).	8	CO4
		OR		
		ii) Interference in atomic absorption spectroscopy (AAS)	8	CO4
	c)	Solve the following (Four Marks)	4	
		i) Application of atomic absorption spectroscopy		CO4
Q.6		Write note on any four (Five mark each)	20	
	a)	Comparative account of SEM & TEM		CO3
	b)	Calculations of optical band gap.		CO3
	c)	Applications of nanomaterials in the communication sector.		CO3
	d)	Difference between AAS and FES		CO4
	e)	Plasma Torch in ICP analysis		CO4

**Total 100**

Above question paper format is for general guideline. Paper Setter may use marking scheme as per their requirement. Use higher levels Bloom's Taxonomy and mark the level as: **Explain<sup>1</sup>**

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