Exam Seat No:\_\_\_\_\_

# C.U.SHAH UNIVERSITY Winter Examination-2015

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Subject Name: Advanced Chemistry

Subject Code:5SC03CHC4

**Branch:**M.Sc.(Chemistry)

**Semester:**3 **Date:08**/12/2015 **Time:**2:30 To 5:30 **Marks:**70

#### **Instructions:**

- (1) Use of Programmable calculator and any other electronic instrument is prohibited.
- (2) Instructions written on main answer book are strictly to be obeyed.
- (3) Draw neat diagrams and figures (if necessary) at right places.
- (4) Assume suitable data if needed.

## **SECTION – I**

Q-1		<b>Define Following te</b>	erms	(07)
	a.	Nanoparticles		(1)
	b.	Quantum Dots		(1)
	c.	Nanocrystal		(1)
	d.	TEM and SEM		(1)
	e.	Cluster		(1)
	f.	Nanowires		(1)
	g.	Nano sensor		(1)
Q-2		Answer the following questions		
	a.	Discuss the advanta	ges of Dynamic light scattering. Write the different methods	(7)
		for synthesis of nanc	particles	
	b.	Write the application of nanoparticles		
			OR	
Q-2		Answer the following questions		
	a.			(14) (7)
		nanoparticles		
	b.	What is acid dyes? Discuss the principle of Green chemistry in details		
Q-3		Answer the following questions		
	a.			
	b.	Write a note on		(6) (8)
		1. Indigo dyes	2.Sulphur dyes	

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Q-3		Answer the following questions		
	a.	What is purification? Discuss the distillation process in detail	(7)	
	b.	Write a note on	(7)	
		1. Anthraquinone dyes2. Fooddyes		
		SECTION – II		
Q-4		Define Following terms	(07)	
	a.	Vat dyes	(1)	
	b.	Azo dyes	(1)	
	c.	Zeta potential	(1)	
	d.	Unit Process	(1)	
	e.	Nitration and Sulphonation	(1)	
	f.	Patent	(1)	
	g.	Colloids	(1)	
Q-5		Answer the following questions	(14)	
	a.	Write a note on Basic operations in dying	(5)	
	b.	What is unit operation? Explain the mixing process	(5)	
	c.	What is vacuum distillation? Discuss the types of biosensor	(4)	
		OR		
Q-5		Write notes on topics:		
	a.	Purification methods	(5)	
	b.	Bio-Nanosensor	(5)	
	c.	Computational chemistry	(4)	

Q-6	<ul><li>Answer the following questions</li><li>a. Write a note on Phase transfer catalyst in detail</li></ul>			(14)
-				(6)
	b.	Write a note on		(8)
		1. Regulatory Affairs	2. IPR	

## OR

Q-6			
	a.	What is synthetic dyes? Discuss the complete classification	(6)
	b.	Write a note on	(8)
		1. Pigment dyes 2. Xanthene dyes	

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