C.U.SHAH UNIVERSITY **Summer Examination-2018**

Subject Name: Physical Chemistry-II

	Subject Code: 4SC06CHC3			Branch: B.Sc. (Chemistry)					
	Semest	er: 6 Date: 0	2/05/2018	Time: 02:30 To 05:30	Marks: 70				
	Instruct	istructions:							
	(1)	Use of Programmable calculator & 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	t if needed.						
Q-1		Attempt the follow	wing questions	5:		(14)			
	a	Give the statement	of third law of	thermodynamics.		01			
	b What do you mean by residual entropy?								
	c	Define the reversit	ole reaction			01			
	d	Define chemical ki	netics			01			
	e	What do you mean	by radioactivi	ty?		01			
	f	Define isobars				01			
	g	Define half-life per	riod			01			
	h	Define mass defect	t .			01			
	i	Define zero order i	reaction.			01			
	j	Define reverse osn	nosis			01			
	K	Define boiling poin	nt elevation.			01			
	1	what is SI unit of i D_{a}^{236}	radioactivity?		tion	01			
	m n	38 38 38 38 38 38 38 38	$_{86}$ KII + 2. C in reaction.	omplete the given nuclear reac	uon	01 01			
Atte	empt any	four questions from	a Q-2 to Q-8						
Q-2	2	Attempt all quest	ions			(14)			
	a) Explain the determ	ination of abso	olute entropies of solid, liquid a	nd gasses.	07			
	b) Explain the Le'Ch	ateliers Princip	le		07			
Q-3	5	Attempt all quest	ions			(14)			
	a) Explain methods to	o determine the	order of reaction		07			
	b	Calculate half-life	for first, second	d and third order reactions		07			

Q-4		Attempt all questions	(14)
	a)	Explain the first order reaction.	05
	b)	Derive the equation: S=klnW	05
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		The half-life period of radon is 3.825 days. Calculate the activity of radon.(Atomic weight of radon =222 g/mole)	f 04		
Q-5		Attempt all questions	(14)		
	a)	Explain the properties of radiation.	07		
	b)	Explain radioactive disintegration series.	07		
Q-6		Explain the following phenomena:			
	a)	Third order reaction and their characteristics.	07		
	b)	The Freezing point depression	07		
Q-7		Attempt all questions	(14)		
	a)) Explain Geiger-Muller counter and Scintillation Counter.			
	b)	Explain lowering in vapor pressure. Determine molecular weight from Vapor Pressure lowering.	05		
		Give the differences between Nuclear fission and Nuclear fusion	03		
Q-8		Attempt all questions	(14)		
	a)	Explain the different methods to determine osmotic pressure	07		
	b)	Explain the Effect of Temperature on rate of reaction.	03		
	c)	Explain osmotic pressure and colligative properties of electrolytes.	04		

