

Cours	wiax. Warks: 100						
	SECTION A						
		x 4M = 20	0 Marks)				
Q 1	a. The two main mechanisms through which rocks melt are and	0.4	001				
	b. With respect to silica percentage, two extreme types of magmas are &	04	CO1				
Q 2	Mark True/ False						
	a. Rhyolitic magmas are the most viscous one						
	b. Rocks consisting of more than 90% mafic minerals are termed as Melanocratic	04	CO1				
	c. Gabbro is devoid of quartz						
	d. Plagioclase replaced by nepheline in nepheline-syenite						
Q 3	a. Sills linked by relatively short dike-like segments known as						
	b. Volcanic glass is otherwise known as	04	CO1				
	c. Anhedral grains give rise totexture	V <del>1</del>	COI				
	d. Transformation of glass to crystalline matter is known as						
Q 4	a. In Poikilitic texture, smaller grains(chadacryst) are accommodated in large						
	grains(oikocryst	04	CO2				
	b. CIPW Classification based upon two types of minerals, namely &	V4	COZ				
	The second secon						
Q 5	a. Mutually touching phenocrysts in interstitial matrix give rise to texture						
	b. Sandpaper is an example of abrasive.	0.4	COA				
	c. In CIPW, the input mineral composition must be in form	04	CO2				
	d. Plutons of area < 100 sq. km is known as						
	SCETION B						
		x10M = 4	0 Marks)				
Q 6	Differentiate between vesicular and amygdaloidal texture and defend their occurrence in	10	CO3				
	volcanic rocks	10	COS				
Q 7	Explain the formation mechanism of porphyritic texture highlighting the role of physio-	10	CO2				
	chemical condition	10	CO2				
Q 8	Defend the statement "Reaction texture termed as Reaction structure".	10	CO3				
Q 9	Compare Tamman & Ostwald theories and suggest the most appropriate one governing						
	crystallization of uni-component magma.						
		10	CO4				
	OR						

	Examine & validate the statement "Uni-component system should have a maximum of two degree of freedoms".		
	SECTION C (Scan and upload) (2Q:	x20M = 40	) Marks)
Q 10	Label the Binary phase diagram where A & B are the two components of a binary system. With suitable assumptions, examine congruency/incongruence of it.  Using QAPF Diagram, give suitable nomenclature to the below mentioned composition Rock is a silica under saturated one. Composition is as follows	5+15 10=20	CO3
	Quartz: 25% Anorthite: 20% Orthoclase: 20%  OR Using CIPW Norm, find out the Salic and Femic minerals, their abundance and the rock class.		
	The spread-sheet is attached below.		

Constituents Of Rock		SiO <sub>2</sub>		$Fe_2O_3$	FeΩ	MgQ	ÇaΩ	Na <sub>2</sub> O	K <sub>2</sub> O	H <sub>2</sub> O	CO <sub>2</sub>	TiO <sub>2</sub>	$P_2O_5$	$SO_2$	S	MnQ					
Percentages(analysis)		49.68	36.13	2.49	8.88	1.13	0.79	0.25	0.32							0.05	Molecular			Gro	up of
Molecular Weights		60	102	160	72	40	56	62	94	18	44	80	32	355	19	71	Proportions	Molecular	olecular Percentage star		dard
Molecular Proportion																	Troporacias		Percentage NORM		eral
Quartz	S <sub>1</sub> O <sub>2</sub>																	Weights 60		Q	
Orthoclase	K2O, Al2O3, 6SiO2																	556			
Albite	Na2O, Al2O3, 6 SiO2																	524			
Anorthite.	CaO, Al <sub>2</sub> O <sub>1</sub> , 2 SiO2																	278		F	
Leucite	K2O, Al <sub>2</sub> O <sub>3</sub> , 4 SiO2																	436			
Nepheline	Na2O, Al <sub>2</sub> O <sub>3</sub> , 2 SiO2														П			284		L	Salic
Corundum	Al <sub>2</sub> O <sub>3</sub>																	102		С	Group
															Н						
Acmite	Na <sub>2</sub> O, Fe <sub>2</sub> O3, 4SiO <sub>2</sub>																	462			
	CaO, SiO2																	116			
	MgQ, SiO2																	100			
Diopside	FeQ, SiO2														П			132			
Wollastonite	CaO, SiO2														П			116			
	MgO, SiO2														П			100			
Hypersthene	FeO, SiO2														П			132		P	
	2MgO, SiO2														П			140			
Olivine	2FeO, SiO2																	204		0	
Magnetite	FeO, Fe <sub>2</sub> O <sub>3</sub>														П			232			1
Haematite	Fe <sub>2</sub> O <sub>3</sub>														П			160			
Ilmanite	FeO, TiO2														П			152		M	
Pyrite	FeS <sub>2</sub>														П			120			1
Apatite	3Cao, P2O3, 1/3CaF2														П			336			Femic
Calcite	CaO.CO <sub>2</sub>														П			100		Α	Group