STELLA MARIS COLLEGE (AUTONOMOUS) CHENNAI 600 086 (For candidates admitted during the academic year 2008-09 & thereafter)

SUBJECT CODE: CH/MC/IC24

B.Sc. DEGREE EXAMINATION, APRIL 2010 BRANCH IV - CHEMISTRY SECOND SEMESTER

COU! PAPE TIME	ER :	MAJOR – O INORGANI 30 MINUTI	C CHEMISTRY -1		ЛARKS : 30
	то в		SECTION - A D ON THE QUEST	ΓΙΟΝ PAPER ITSEL	Æ
ANSV	WER ALL QU	UESTIONS:			
I	Choose the	correct answei	::		5x1=5
1.	Heavy water is so called because it a) has heavy particles suspended in it b) is denser than common water c) has a heavier isotope of hydrogen in place of hydrogen d) none of these				
2.	Alkali metal a) ice-cold v	~ .	ctive. They are kept b) kerosene	c) phenol	d) alcohol
3.	B_2O_3 is a) acidic		b) basic	c) amphoteric	d) ionic
4.	The most rea	active form of c	earbon is b) graphite	c) coal	d) charcoal
5.	PCl ₃ underg a) HPO ₃	oes hydrolysis	to produce b) H_3PO_2	c) <i>H</i> ₃ <i>PO</i> ₄	d) H_3PO_3
II	State whether true or false:				5x1=5
6. 7. 8. 9. 10.	Alkaline earth metals form only unipositive ions. Germanium tetrahalides have SP^3 hybridisation. Both SO_3 and SeO_3 in the solid state are cyclic compounds. Hypophosphorous acid is tribasic. The structure of XeF_2 is linear.				
III	Match the	following:			5x1=5
11. 12. 13. 14. 15.	BF_3 - Trigonal pyramidal Nitric oxide - covalent hydride IF_7 - an electron deficient compound XeO_3 - pentagonal bipyramidal H_2O - paramagnetic				

IV	Fill in the blanks:		5x1=5
16.	In nuclear reactor, heavy water is used to slow down the	ne speed of	
17.	Talc belongs to the class of	_ silicates.	
18.	CL_2O_7 is the anhydride of		
19.	Phosphorous is kept immersed in	_•	
20.	A noble gas that was detected in the sun before it was	detected on earth is	
	·		
V	Answer the following questions in a line or two:		5x2=10
21.	Why are alkali metals used in photoelectric cells?		
22.	CO_2 is a gas while SiO_2 is a solid-account for:		
23.	Why does phosphorous glow in the dark?		
24.	I_2 dissolves sparingly in water but readily in a solution	of <i>KI</i> . Why?	
25.	H_2S is more acidic than H_2O - explain.		

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MAJOR - CORE

INORGANIC CHEMISTRY -I

COURSE :

PAPER

TIME	: 2 ½ hours	MAX. MARKS: 70				
I.	SECTION - B	(5,46-20)				
1.	Answer any five questions:	(5x6=30)				
1.	Explain the classification of hydrides with an example f	for each type.				
2.	Write notes on crown ethers and mention their applicati	• •				
3.	Discuss the structure and bonding of diborane.					
4.	Describe the preparation, properties and structure of Caro's acid.					
5.	Give the names and structures of various oxyacids of ni	_				
6.	a) Explain the basic nature of iodine.	(3)				
7	b) What are pseudohalogens? Give two examples?	(3)				
7.	What are clathrate compounds? Comment on their stab	ollity and write their uses.				
II.	Answer any two questions:	(2x20=40)				
8.	 a) How does heavy water react with the following? (i) CaC₂ (ii) Mg₃N₂ b) How will you extract Lithium from Spodumene? c) Write any four points of similarity between alkali memetals. 	(iii AlCl ₃ (3x2=6) (8) etals and alkaline earth (6)				
9.	a) Write the method of preparation of boron nitride. Exb) Compare the carbon group elements with respect to and oxides.c) How are silicates classified? Give the composition a of silicate.	explain its structure. (4) the formation of hydrides (6)				
10.	a) Give an account of the preparation, properties and st	cructure of Hydroxylamine (8)				
	b) Compare the elements 0 , S , Se and Te with respectand oxides.	et to their hydrides, halides (6)				
	 c) What are interhalogen compounds/ Write down their example for each type. 	ir different types with an (6)				
11.	a) Explain the extraction of Beryllium from its one.	(10)				
	b) Explain the preparation and uses of silicones.	(5)				
	c) How will you prepare XeF_6 . Discuss the structure a					