I B.Sc Botany	
Dept. of Chemistry Vivekananda College Tiruvedakam West Date: 11.04.2019	III Sessional Test II Semester Max. Marks: 50 Time: 2 Hours
CHEMISTRY FOR BIOLOGIST -II (07AT	B 2)
SECTION -A	
Answer ALL questions	(10 x 1 = 10)
1. An example of a simple protein is	CO3
(a) casein (b) lactalbumin (c) viteline (d) h	aemoglobin
2. Which one the following acids is capable of forming Zwitter ion	? CO3
(a) Halo acid (b) Hydroxy acid (c) α-amino acid	(d) Nitro acid
3. Which of the following refers to Vitamin D ₁ ?	CO3
(a) caliciferol (b) ergocalciferol (c) cholecalciferol (d) to	ocopherol
4. Which one of the following will turn blue litmus red?	CO1
(a) Vinegar (b) Lime water (c) Baking soda solution (d) Was	hing soda solution
5. Which one of the following is an example for acid according to U	Jsanovich concept? CO1
(a) SiO_2 (b) Na_2O (c) SO_3 (d) $AICl_3$	
6. Which is the major cause of oceanic pollution	CO5
(a) plastic waste (b) oil spills (c) industrial waste (d) dome	stic waste
7. At each tropic level from lower to higher, pollutant gets the first set the set of the set	mes concentrated CO5
(a) 5 (b) 10 (c) 15 (d) 20	1 6
8. Loam soil, considered to be the best for all types of crops is com (a) (00) meters 400 size (b) 700 meters 200 size	posed of COS
(a) 60% water, 40% air (b) 70% water, 30% air (c) 66% water, 24% air (d) 75% water, 35% air	
(c) 60% water, 54% all (d) 75% water, 25% all	005
9. Which allong the following is the sign of polluted water (a) had tests to drink (b) offensive adour (a) upplessent cold	(d) all the above
(a) bad taste to drink (b) offensive odour (c) unpleasant core	
(a) nitates, sulphates, (b)sulphates phosphates (c) nitrates phosph	tag d) none of the show
(a) intates, surpliates (b)surpliates, phosphates (c) intrates, phosphates	ates (a) none of the above
Answer any FIVE questions	$(5 \times 2 = 10)$
11 What is Zwitterions in amino acid?	(C A 2 = 10) CO3
12. What is meant by air pollution?	CO5
13 Mention composition of atmospheric air	CO5
14 Define soil pollution	CO5
15 What do you mean by water pollution?	CO5
16 Write the two types of organic pesticides	CO4
17 Write any two effects of organic pollutants in water	CO5
SECTION – C	
Answer any THREE questions	$(3 \times 6 = 18)$
18. Write a note on Vitamin D, E and K.	CO3
19. Illustrate the causes and effect of ozone layer depletion	CO5
20. Discuss the classification of air pollutants with examples.	CO5
21. Write a note on the pH of soil	CO5
22. Explain water treatment processes	CO5
<u>SECTION – D</u>	

Answer any ONE question (1 x 12 = 12) 23. Write an account of vitamins, their important sources, biological importance and the deficiency diseases caused by them. CO3 24. Discuss the various sources of water pollution. CO5

	I B.Sc., PHYSICS	
Dep	ot. of Chemistry	III Sessional Test
Viv	ekananda College	II Semester
Tir	uvedakam West	Max. Marks: 50
Dat	te: 11.04.2019	Time : 2 Hours
	CHEMISTRY FOR PHYSICIST – II (07ATP2)	
	<u>SECTION – A</u>	
Ans	swer ALL questions	(10 x 1 = 10)
1)	Elements in the modern periodic table are arranged on the basis of their	(CO1)
	(a) Chemical Symbols alphabetically (b) Atomic Mass	
	(c) Boiling Point (d) Atomic Number	
2)	The most electronegative element in the periodic table is	(CO1)
-	(a) Ceasium (b) Chlorine (c) Barium (d) Fluor	ine
3)	Photochemical decomposition of a substance is called	(CO2)
	(a) Thermal dissociation (b) Thermolysis (c) Photolysis (d) Chemical diss	ociation
4)	The glow of fireflies is due to the aerial oxidation of luciferin. It is an exa	mple of (CO2)
-	(a) Fluorescence (b) Phosphorescence (c) Bioluminescence (d) Chemilu	iminescence
5)	The overall arrangement of particles in a crystal is called the	(CO3)
\sim	(a) Interfacial angle (b) Edge of a cystal (c) Crystal lattice (d)	Unit cell
6)	The total number of atoms in a body centred cubic unit cell is	(CO3)
7)	(a) 1 (b) 4 (c) 3 (d) 2 $\sum_{n=1}^{\infty} 1^{n} \sum_{i=1}^{n} 1^{n} \sum_{i$	
/)	Faraday's constant is defined as	(CO4)
	(a) charge carried by 1 electron (b) charge carried by one mole	of electrons
0)	(c) charge required to deposit one mole of a substance (d) charge carrie	ed by two moles of elect
8)	According to Armenius theory an electrolyte when dissolved in water giv	es two types of
0)	(a) charged particles (b) molecules (c) ion pairs (d) fundamental part	(CO4)
9)	(a) KOH (b) KCl (c) KPr (d) NaCl	(COS)
10)	(a) KOII (b) KCI (c) KDI (d) NaCI The energy of a secondary call is usually renewed	$(\mathbf{CO5})$
10)	(a) By passing a current through it (b) it cannot be renewed at	(CO3)
	(a) by passing a current through it (b) it cannot be renewed at (c) by penewing its chemicals (d) by beating it	a11
	(c) by hencwing its chemicals (d) by heating it SECTION – B	
And	swer any FIVE questions	$(5 \ge 2 - 10)$
11 ¹	What is electronic configuration?	$(5 \times 2 = 10)$
12^{11}	What is meant by modern periodic law?	(CO1)
12	Define photosynthesis	(CO1)
13, 14	What do you mean by interfacial angle?	(CO2)
15	Define cell constant	(CO3)
16	What do you mean by primary cell and secondary cell?	(CO5)
17	Define electrochemical cell	(CO5)
17,	SECTION - C	(\mathbf{COS})
And	swer any THREE questions	$(3 \times 6 = 18)$
18) Define ionization potential and elaborate their trends along the period and	groups $(CO1)$
19	Explain Beer-Lambert law and write the limitations	(CO2)
20°) Write a note on i) Allotropy ii) Polymorphism	(CO3)
$\frac{20}{21}$	Explain Faraday's law of electrolysis	$(\mathbf{CO4})$
$\frac{-1}{22}$	Write a note on Weston – Cadmium cell.	(CO5)
,	SECTION – D	
Ans	swer any ONE question	$(1 \times 12 = 12)$

Answer any ONE question(1 x 12 = 12)23) Write a note on the determination of electronegativity by Pauling and Mulliken's methods (CO1)24) How will you determine the pH using hydrogen electrode, glass electrode and quinhydrone (CO5) electrode?

Dept. of Chemistry Vivekananda College Tiruvedakam West Date: 11 .04. 2019	III Sessional Test II Semester Max. Marks: 50 Time: 2 Hours
CHEMISTRY FOR BIOLOGIST -II (07ATZ2)	
<u>SECTION – A</u>	
Answer ALL questions 1. According Process in which acids (H ⁺) and bases (OH ⁻) react to form salts an (a) Neutralization (b) hydrogenation (c) halogenation (d) sublimation	(10 x 1 = 10) and water is called <i>CO1</i>
 2. Highest percentage of air consists of (a) Oxygen (b) Carbon dioxide (c) Nitrogen (d) Argon 	<i>C05</i>
 3. Ozone is found in (a) Mesosphere (b) Ionosphere (c) Stratosphere (d) Exosphe 4 Most dangerous metal pollutant of automobile exhaust is 	re CO5
 (a) lead (b) arsenic (c) mercury (d) cadmium 5. Ozone layer is depleted by	C05
(a) CF_2Cl_2 (b) C_6H_6 (c) CH_4 (d) CH_3Cl 6. LD-50 is the dose of a substance that will (a) kill 50% of a nonvelotion (b) group 50% of a nonvelotion	<i>C04</i>
 (a) kill 50% of a population (b) grow 50% of a population (c) develop 50% of a population (d) none of the above 7. Two types of fungicides are: (a) context and contexts 	<i>C04</i>
(c) natural and contact (d) none of the above 8. Which is the major cause of oceanic pollution?	<i>C05</i>
(a) plastic waste (b) Oli spills (c) industrial waste (d) domestic waste9. Which among the following is the sign of polluted water(a) bad taste to drink (b) offensive odour	<i>C05</i>
 (c) unpleasant colour (d) all the above 10. Kind of land pollution in which salt content rises and land becomes unsuitable is (a) carbonization of soil (b) deoxygenating soil (c) salinization of soil (d) oxygenation of soil 	for farming is called. <i>CO5</i>
Answer any FIVE questions	$(5 \ge 2 = 10)$
11. Define pH.	CO1
12. What is meant by air pollution?	<i>CO5</i>
13. Mention the composition of atmospheric air.	<i>CO5</i>
14. Write any two sources of air pollution.	<i>CO5</i>
15. Briefly write the classification of fungicide.	<i>CO4</i>
16. What do you mean by water pollution?	<i>C05</i>
17. Define soil pollution.	<i>C05</i>
<u>SECTION – C</u>	
Answer any THREE questions	$(3 \times 6 = 18)$
18. Discuss Usanovich concept of acids and bases.	<i>C01</i>
19. Discuss the classification of air pollutants with examples.	
20. Describe green house effect. How does it affect the global climate?	
21. Describe the different types of pollution of water.	C05
22. Explain water treatment processes. SECTION – D	COS
Answer any ONE question	$(1 \times 12 = 12)$
23. Discuss the effect of air pollutants on man. plants animals and materials	CO5
24. Explain sulphur, copper and mercury containing compounds as fungicides.	C04

Dept. of Chemistry Vivekananda College Tiruvedakam West Date: 08.04.2019		I B.Sc-Chemistr	'y	III Sessional Tes II Semester Max. Marks: 50 Time : 2 Hours
	GENERAL	CHEMISTRY-III (07CT21)	
Answer ALL questions		SECTION - A		$(10 \times 1 = 10)$
1. Naphthalene undergoes	oxidation with	$Na_2Cr_2O_7/H_2SO_4$ to t	form	(10 m 1 ° 10) (CO3)
(a) benzoic acid (b)	decalin	(c) benzene	(d) phthalic a	acid
2. Anthracene undergoes	electrophilic su	bstitution reactions m	ainly at	(CO3)
(a) $C-1$ (b)	C-2	(c) C-9	(d) C-1 and (C-2
3 Which one of the follow	ving is called a	s grain alcohol?	(u) C T und	(CO3)
(a) methyl alcohol (b)	ethyl alcohol	(c) propyl alcohol	(d) isopropy	l alcohol
4 The enzyme that conve	rts glucose or f	ructose into ethyl alco	bol is	(CO3)
(a) diastase (b)	invertase	(c) zvmase	(d) maltase	(005)
5 What is the boiling point	nt of ethanol?	(c) Zymase	(u) manase	
$(a) 82^{\circ}C$ (b)	$73^{\circ}C$	$(a) 88^{\circ}C$	$(4) 78^{\circ}C$	$(\mathbf{CO3})$
6 Malting point of phono	75 C	(C) oo C	(u) / o C	(CO3)
(a) hydrogon honding	(b)ionia ha	nding (a) acycla	nt bonding (d) al	C = (CO3)
(a) fryurogen bollung 7 What is the commercial	l method of area	nume (c) covale	in oonuning (u) al	
(a) Dowe process	i method of pre	(b) Erom diagon:	um calt	(CO3)
(a) DUWS PIDCESS	aliarlia asid	(U) FIUIII UIAZOIII (d) Hools mothed	uill Sail	
(C) By decarboxylation of 8. Which group forms the	sancync acid	(u) HOCK method	202	(\mathbf{CO}^2)
a) Alashala (h) Ethera	subligest n-bo	(d) All aqual atrac		(COS)
(a) Alcohols (b) Ethers	(c) Phenois	(d) All equal strol	ng 1 aan aantootian a	f the melecule on
9. The ration between the	effective conce	entration and the actua	al concentration of	the molecule or
ions in a solution is called	11	, , ,·	(1)	(COS)
(a) van't Hoff factor (b)	colligative proj	perty c) active concen	tration (d) a	ctivity coefficient
10. The molal depression	constant is give	en by the expression		(COS)
(a) $\Delta T_f \mathbf{X} \mathbf{M}$ (b) $\Delta T_f \mathbf{X} \mathbf{I}$	n (c) $\Delta T_f / m$	(d) $\Delta T_f / M$		
	•	SECTION – B		(5 3 10)
Answer any FIVE quest	ions			$(5 \times 2 = 10)$
11. Draw the structure of	phenanthrene.	C 1	2	(CO3)
12. How will you prepare	9,10-anthraqui	none from anthracene	27	(CO3)
13. What happen when eth	nyl alcohol is tr	reated with phosphoru	is halide?	(CO3)
14. Why phenol is more a	cidic than alcol	nol?		(CO3)
15. Write chemical reaction	on for the prepa	ration of phenol from	chlorobenzene.	(CO3)
16. Define Van't Hoff fac	tor (i) .			(CO5)
17. Define Osmotic press	ure.			(CO5)
		SECTION – C		
Answer any THREE q	uestions			$(3 \times 6 = 18)$
18. Discuss any one meth	od of preparatio	on and four chemical	properties of ethy	l mercaptan.
Give the preparation of fo	llowing : (i) l	penzyl alcohol (ii)) glycerol (iii) r	ntroglycerin (C
19. How will you distingu	iish among prin	nary, secondary and te	ertiary alcohols by	y using Lucas test
and Victor Meyer's test?				(CO3)
20. Explain the following	with the examp	ple.		
(i) Kolbe's reaction (ii) Re	eimer-Tiemann	reaction, (iii) reaction	n with formaldehy	vde (CO3)
21. Given an account of a	bnormal colliga	ative properties of solu	ution.	(CO5)
22. Derive the expression	to calculate the	e molecular weight of	unknown solute b	by using depression
in freezing point of pure s	olvent by addit	ion of non-volatile so	lute.	(CO5)
		SECTION – D		
Answer any ONE questi	on			$(1 \times 12 = 12)$
23. Explain why phenol h	as higher boilir	ng point than that of th	ne toluene?	
Show how you will synthe	esize: (i) resorc	inol (ii) catechol and	(iii) quinol. $(3+9)$)s (CO3)
24. (a) How will you prep	are naphthalen	e and anthracene?		
(b) How will you synth	esize following	g compounds from nap	phthalene?	(CO3)
(i) 2-naphthalene sulph	onic acid (ii)	decalin (iii) phthalie	c acid (iv) 1,4-na	phthaquinone
(1) 2-naphulaiene sulph		**************************************	c aciu (1v) 1,4-fia	philiaquinone

I-B.Sc. CHEMISTRY				
Dept. of Chemistry Vivekananda College Tiruvedakam West Date: 12.04.2019	III Sessional Test II Semester Max. Marks: 50 Time: 2 Hours			
GENERAL CHEMISTRY -IV(07CT22)				
SECTION –A				
Answer ALL questions	(10 x 1 = 10)			
1. Which of the following pairs represents isobars?	(CO1)			
(a) 1708 and 1608 (b) $40K19$ and $40Ca20$ (c) $15N7$ and 1608	(d) 235U92 and 238U92			
2. A radioactive isotope has a nair-life of 20 days. If 100 gms, of the substance isotope remaining after 40 days is	(CO1)			
(a) 2.5 gms (b) 1.5 gms(c) 2.5 gms(d) 7.5 gms	(601)			
3. Pyridine reacts with n-butyllithium gives the following products	(CO3)			
(a) 2-butyl pyridine (b) 3-butyl pyridine (c) 4-butyl pyridine (d) all the	above			
4. Hydrocarbon can be prepared from when Grignard reagent reacts with	(CO3)			
(a) water(b) ether (c) thioalcohols(d) all the above				
5. In photochemical reactions, the absorption of light takes place in	(CO4)			
(a) primary process only (b) secondary process onl	У			
(c) both primary and secondary process (d) either primary or second	ndary process			
6. The wavelength of ultraviolet and visible regions of electromagnetic spectro (a) Less than 2000 Å (b) more than 2000 Å (c) 2000 to 2000 Å	$\frac{1}{2} \log_2 \frac{1}{2} \log_2 \frac{1}$			
(a) Less than 2000 A (b) more than 3000 A (c) 2000 to 3000 A (c) 7^{-1} A plot of log [A] versus time (t) gives a straight line with a negative slope	The order of the reaction is			
(a) zero (b) two (c) three (d) first	(CO5)			
8. Cyclic ethers with three-membered ring are called	(CO2)			
(a) Lactones (b) Oxiranes(c) Alkoxides(d) Epoxy resins	()			
9. Collision theory is applicable to	(CO5)			
(a) first order reaction (b) zero order reaction (c) intramolecular reaction	on (d) bimolecular reaction			
10. Ethylene oxide reacts with ammonia to give(CO2)				
(a) 1-Aminoethanol (b) Ethylamine (c) 2-Aminoethanol	(d) Acetamide			
SECTION – B				
Answer any FIVE questions(5 x 2 = 10)				
11. Give any four difference between fluorescence and phosphorescence	(CO4)			
12. What is bioluminescence and give example	(CO4)			
13. Write Reformatsky reaction	(CO3)			
14. What do you mean by artificial transmutation of elements? Give example	(CO1)			
15. How will you determine order of a reaction?	(CO5)			
16. Give four representative examples of cyclic ethers?	(CO2)			
17. What happens when ethylene oxide is heated a) with HCN b) with metha	unol (CO2)			
SECTION – C				
Answer any THREE questions	$(3 \times 6 = 18)$			
18. Account the stability of the complex based on n/p ratio	(CO1)			
19. Derive an equation for the rate of radioactive disintegration and half-life pe	eriod (CO1)			
20. Explain the collision theory of unimolecular reaction.	(CO5)			
21. Explain zero-order reaction with examples. Write rate law expression for it	. (CO5)			
22. Derive the rate equation for the second order reaction.	(005)			
SECTION - D Answer any ONEquestion	$(1 \times 12 - 12)$			
23. (a) Write a note on the following (i) Nuclear shell model(ii) Frankland's re	$(\mathbf{\Gamma} \mathbf{A} \mathbf{I} \mathbf{Z} - \mathbf{I} \mathbf{Z})$			
24. When a set on the bolic wing (i) there is the index (ii) the initial of the				

24. What are Crown ethers? Discuss their application in oxidation, substitution and elimination reaction (CO2)

Dej Viv	pt. of Chemistry vekananda College	III Sessional Test IV Semester
Tir	ruvedakam West	Max. Marks: 50
Dat	te: 08.04. 2019	Time : 2 Hours
	Organic and Physical Chemistry (07CT41)	
	<u>SECTION – A</u>	
An	swer ALL questions	(10 x 1 = 10)
1)	Which one of the following isomerism is exhibited by ethyl acetoacetate	?
	a) Geometrical b) Tautomerism c) Functional d) Opti	ical
2)	The base-catalyzed condensation of two ester molecules gives an alcohol and β	-ketoester is called
	a) Corey-House reaction b) Claisen condensation c) Aldol condensation	on d) Transesterification
3)	Acid hydrolysis of ethyl acetoacetate in the presence of Con. NaOH and dil.	HCl produces a mixture of
	a) $CH_3COOH + C_2H_5OH$ b) $CH_3CH_2COOH + C_2H_5OH$	I ₅ OH
	c) $CH_3COOH + CH_3OH$ d) 4-Methyl uracil	
4)	The molar viscosity is the	
	(a) Product of molar surface and viscosity (b) Sum of molar surface a	and viscosity
	(c) Difference of molar surface and viscosity (d) Product of molar volu	me and density
5)	The molar volume of a liquid at a temperature where its surface tension i	s unity is called
	(a) Molar volume (b) Molar surface tension (c) Molar viscosity	(d) Parachor
6)	Lactic acid is manufactured by fermentation of	
	a) Glucose b) fructose c) Molasses d) Galactose	
7)	The intermolecular cyclic diester of Lactic acid is	
	a) Lactide b) Lactone c) Caprolactum d) γ –Lactone	
8)	Which salt of benzoic acid is used as a preservative agent?	
	a) Na` b) K c) Ca d) Zn	
9)	Among the following which one doesn't has dipole moment?	
	a) CO_2 b) NO_2 c) SO_2 d)	H ₂ O
10) In Parke's process, which one behaves as two immiscible liquids?	
	a) Molten Pb & Ag b) Molten Pb & K c) Molten Pb & Na d)	Molten Pb & Zn
	SECTION – B	
An	swer any FIVE questions	$(5 \mathbf{x} 2 = 10)$
11) Write the preparation of glyoxylic acid.	
12) Write the IUPAC name of ethylaceto acetate.	
13) What do you mean by additive property? Give one example.	
14) How will you synthesis Lactic acid from acetaldehyde?	
15) Explain the usage of dipole moment in order to differentiate cis and trans	isomers.
16) What is meant by magnetic permeability?	
17) Define paramagnetism with examples.	
	SECTION – C	
An	swer any THREE questions	$(3 \times 6 = 18)$
18) What do you mean by keto-enol tautomerism? Explain with examples.	
19) Define the following i) Rheochor ii) Parachor iii) Dunstan rule	
20) Write any three synthetic uses of ethyl acetoacetate.	
21) Write down the important uses of Lactic acid.	
22) Mention briefly about the action of heat on hydroxy acids.	
	<u>SECTION</u> – D	
An	swer any ONE question	$(1 \times 12 = 12)$
23) i) Discuss any four synthetic applications of malonic ester.(8)	·

II B.Sc., CHEMISTRY

ii) Write a note on the decarboxylation of keto acid.(4)24) How will you prepare anthranilic acid from Phthalic acid? Show the detailed mechanism (12)

		I	B.Sc-Chemistr	y			
Dept. of Chemistry Vivekananda College Tiruvedakam West Date: 12.04. 2019				II IV M Tiu	I Sessional V Semester lax. Mark me : 2 Hou	l Test r s: 50 urs	
		INORGANI	C CHEMISTRY	-I (07CT42)			
			SECTION -	A			
Answe	er ALL questions				(10×1)	= 10)	
1.	Was used	by the O.Brunk	in 1905 for the c	letermination of n	ickel in ste	eel	
	a) Dimethylgly	yoxime	b) thiourea	c) alumir	ion	d) Magne	eson
2.	Aluminon reagent	is prepared by o	dissolving 0.1 gre	em of the substand	ce in 100 n	nl	
	a)alcohol	b) acid	c) water	d) both a	. & b		
3.	Magnesium is detec	cted by					
	a)Dimethylglyoxim	e b) M	lagneson	c) aluminon	d) C	upron	
4.	When cupron make	s complex with	copper c	olour precipitate	will be form	med	
	a) Blue	b) green	c) red	d) yellow		
5.	Alizarin gives red p	recipitate with	salt in amm	oniacal solution			
	a) Al	b)Cu	c)Ca	d)Mg			
6.	Uranyl zinc acetate	is used as a lab	oratory reagent i	n the determination	on of		
	a)pottasium	b)calcium	c) sodium	d) magne	esium		
7.	EDTA is act as	ligand					
	a) Chelating b) he	exadentate	c) tetradentate	d) both a	& b		
8.	Nickel is titrated with	th EDTA agair	nst				
	a)Thio solution	b) murexide	c) pot.permag	nate d) FAS			
9.	Rhodamine – B reag	gent is common	ly prepared by				
	a) benzene b) w	ater c) al	cohol d) acid	l			
10	. Which one the follo	wing reagent e	xhibit two tauton	neric form			
		1	、 . .				

a)Dimethylglyoxime b) Thiourea c) aluminon d) Magneson

SECTION – B

Answer any FIVE questions

- 11. Draw the structure of dimethyl glyoxime and aluminon
- 12. Differentiate between silicate and silicon.
- 13. Write the formula of chain, cyclic and three dimensional silicate.
- 14. Draw the structure of cupron
- 15. What is the use of Magneson
- 16. Give the structure of thiourea
- 17. Give any one analytical applications of alizarin

SECTION – C

Answer any THREE questions

18. What are the common features of organic reagents

- 19. Give the analytical applications of dimethylglyoxime
- 20. Expalin about Aluminon and Rhodamine-B
- 21. Describe about theory of Hardness and softness
- 22. Write short notes on EDTA and its characteristics?

SECTION – D

Answer any ONE question

 $(1 \times 12 = 12)$

 $(3 \times 6 = 18)$

 $(5 \times 2 = 10)$

23. Explain following three dimensional silicates (i) feldspars (ii) zeolites and (iii) Ultamarine 24. Explain indetail estimation of calcium and nickel using EDTA

	III B.Sc., C	CHEMISTRY		
Dept. of Chemistry				III Sessional Test
Vivekananda College				VI Semester
Tiruvedakam West				Max. Marks: 50
Date: 09 .04. 2019				Time : 2 Hours
	Organic Chemi	stry-III (07C)	[61]	
	<u>SECT</u>	10N - A		
Multiple choice questions:				(10 - 1 10)
1) On hydrolysis of piperir	a with NoOU gives	ninaria agid an	A	$(10 \times 1 = 10)$
a) Piperonal	Piperonylic acid	c) Piperidi	u ne d) Cou	niine
2) The coupling constant (I) value for trans isou	mer is	u) C0	
a) $6-12$ Hz b) 12	2-18 Hz c) 8	R-10 Hz	d) 10-12 Hz	
3) The hybridisation of N-a	tom in pyridine is		a) 10 12 112	
a) sp b) sp^2	c) sp^3 d) dsp^2	2		
4) The NMR spectroscopy	is based on the absor	ption of electro	omagnetic radi	ation in the
region.		1	U	
a) Microwave b)	Radio frequency	c) UV	d) Visible	
5) Thyroxin is found in				
a) Thyroglobulin	b) Hemoglobin	c) DNA	d) Blood	
6) Real sex hormone preser	nt in male is			
a) Estrogen	b) Androgen	c) Testoste	rone	d) Progesterone
7) Which of the following i	s not an application	of conducting p	polymers?	
a) Rechargeable batteries	s (b) A	analytical sense	ors	
(c) Electronics	(d) A	Adhesives		
8) Nylon threads are made	up from polyn	ner	la.	d) a classification o
a) polyvinyi	b)polyester	c)polyanno	le	a)poryetnytene
a) what would be intermed	h) carbana	c) carbocat	ion	d) carbanion
10) The dyes attached to the	b) caluelle bibre themselves by	irreversible ch	ioni emical reaction	u) carbanion
a) acidic dyes b)bas	y note themserves by	bre reactive dy	ves d)	azo dves
a) defuie dyes b)bus	SEC	TION - B	u)	azo ayes
Answer any FIVE question	15			$(5 \ge 2 = 10)$
11) Define fingerprint regio	n.			(
12) Draw the NMR spectru	m of ethyl alcohol a	nd toluene.		
13) Write any one preparat	ion of isoquinoline.			
14) Sketch out the structur	e of Testosterone and	d progesterone		
15) What is epoxide resin?	Given an example			
16) What is Fries rearranger	ment			
17) How is caprolactum pro	epared?			
	. <u>SECT</u>	<u>ION – C</u>		
Answer any THREE quest	10 ns			$(3 \times 6 = 18)$
18) Write a note on the isola	ation of alkaloids.	the fellowing	0	
i) H.SO. ii) HNO.	$\mu_{\rm SO}$	1 the following 1 $\frac{1}{2}$. 2	
$1) \Pi_2 SO_4 II) \Pi IO_3$	rmosetting polymers	$I IV) \Pi_2/Pl$		
21) Explain Orton rearrang	ement with suitable (example		
22) Write down the importa	int functions of Thyr	oxine		
	SECT	ION – D		
Answer any ONE question				$(1 \times 12 = 12)$
23) Explain in detail conduc	cting polymer and bio	omedical applie	cations of poly	mers
24) i) Elucidate the structure	e of coniine.		(9)	
ii) Write any one metho	d of synthesis of isod	quinoline.	(3)	

III B. Sc Chemistry

Dept. of Chemistry Vivekananda College Tiruvedakam West Date: 10.04. 2019

Answer ALL questions

III Sessional Test VI Semester Max. Marks: 50 Time: 2 Hours

PHYSICAL CHEMISTRY-IV (07CT62)

SECTION – A

(10 x 1 = 10)

- 1. If the order of reaction is zero. It means that
 - (a) Rate of reaction is independent of temperature
 - (b) Rate of reaction is independent of the concentration of the reacting species
 - (c) The rate of formation of activated complex is zero
 - (d) The rate of decomposition of activated complex is zero
- 2. Which of the following statements is incorrect about the molecularity of a reaction?
 - (a) Molecularity of a reaction is the number of molecules in the slowest step.
 - (b) Molecularity of a reaction is the number of molecules of the reaction present in the balanced equation
 - (c) There is no difference between order and molecularity of a reaction

(d) Molecularity is always a positive whole number.

- 3. The symmetry number is 6 for (a) BF_3 (b) XeF_4 (c) CO $_2$ (d) SF_6
- 4. The molecule having center of inversion among the following is(a) Eclipsed ethane(b) Chloroform(c) Water(d) Chair form of cyclohexane
- 5. Calculate the moment of inertia, *I*, of the molecule ${}^{1}\text{H}^{35}\text{Cl}$. The masses of the two atoms are $m_{\text{H}} = 1.673 \text{ x } 10^{27} \text{ kg}$ and $m_{\text{Cl}} = 5.807 \text{ x } 10^{26} \text{ kg}$. The equilibrium bond length of the molecule is 1.275 Å
 - (a) 2.644 x 10^{47} kg m² (b) 2.644 x 10^{27} kg m²
 - (c) 2.644 x 10^{44} kg m² (d) 2.644 x 10^{24} kg m²
- 6. The first Stokes line and the first anti-Stokes line in the rotational Raman spectrum of N_2O are displaced from the Rayleigh line by 2.514 cm¹ and + 2.514 cm¹, respectively. Determine the rotational constant of N_2O .
 - (a) 0.629 cm^1 (b) 0.419 cm^1 (c) 1.257 cm^1 (d) 2.514 cm^1
- 7. The nuclear g-factors of 1H and 14N are 5.6 and 0.40 respectively. If the magnetic field in an NMR spectrometer is set such that the proton resonates at 700 MHz, the 14N nucleus would resonate at

(a) 1750 MHz (b) 700 MHz (c) 125 MHz (d) 50 MHz

- 8. The number of lines exhibited by a high resolution EPR spectrum of the species, $[Cu(ethylenediamine)2]_{2+}$ is [Nuclear spin (I) of Cu = 3/2 and that of N = 1]
 - (a) 12 (b) 15 (c) 20 (d) 36
- 9. The correct order for the basic features of a mass spectrometer is.
 (a) Acceleration, deflection, detection, ionisation
 (b) Ionisation, acceleration, deflection, detection
 (c) Acceleration, ionisation, deflection, detection
 (d) Acceleration, deflection, ionisation,

(c) Acceleration, ionisation, deflection, detection (d) Acceleration, deflection, ionisation, detection

10. Which of the following formulae is consistent with a molecular ion of m/z 73 in a mass spectrometry experiment?

(a) $C_3H_8N_2$ (b) $C_4H_{11}N$ (c) $C_4H_{10}O$ (d) C_3H_5NO

SECTION – B

Answer any FIVE questions

- 11. Define fundamental vibrational frequency and first overtone in IR spectroscopy
- 12. Write criteria for a molecule to be rotational, vibrational, NMR and ESR active
- 13. State and give the importance of Nitrogen rule in mass spectroscopy with example
- 14. Draw the instrumentation diagram of NMR spectroscopy
- 15. Define the following terms (a) Meta-stable peaks (b) Isotopic peaks
- 16. A compound shows a proton NMR at 240 Hz downfield from TMS peak in a spectrometer operating at 60 MHz. What are the values of the chemical shifts value in delta and tau?
- 17. Which of the following molecules show a vibrational Raman spectrum? and Why?: H₂, CH₄, CH₃Cl, C₂H₆, SF₆

SECTION – C

Answer any THREE questions

- 18. Compare and contrast the principle of NMR and ESR spectroscopy
- 19. Illustrate determination of moment of inertia and bond length by microwave spectroscopy with example
- 20. Derive an equation for rotation vibration spectra of diatomic molecule
- 21. Discuss the principle of hyperfine splitting. Show the hyperfine splitting of methyl radical in ESR spectroscopy
- 22. Write Mclafferty rearrangement. Mention its importance in mass spectrometry to identify the molecules

SECTION – D

Answer any ONE question

- 23. (a) Explain the collision theory of unimolecular reaction (5)
 - (b) How will you determine the order of reaction (5)
 - (c) Differentiate pseudo first order reaction from first order reaction (2)
- 24. (a) Discuss diagrammatically the point groups for water and ammonia (4)
 - (b) Explain symmetry element and its types (5)
 - (c) Compare and contrast collision theory and ARRT(3)

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 $(3 \times 6 = 18)$

$(1 \times 12 = 12)$

$(5 \times 2 = 10)$

	III B. Sc	Chemistry	
Dept. of Chemistry			III Sessional Test
Vivekananda College			VI th Semester
Tiruvedakam West			Max. Marks: 50
Date: 11 .04.2019			Time: 2 Hours
NA	NOCHEMI	STRY- (07EP62)	
	SECT	ION –A	
Answer ALL questions			(10 x 1 = 10)
1. Negative Staining is used for example.	mining		
a) Virus particles	b) Protein m	olecules	11
c) Bacterial flagella	d) Virus par	ticles, protein molecules	s and bacterial flagella
2. Magnification of light microscope	e 18	1) 2500V	
a) 1500X b) 2000X	c) 1000X	a) 2500X	NO 2 mm duesd by
3. Which explosive chemicals like p	notoiuminesc	ence is quenched due to	NO 2 produced by
catalytic oxidation.		(d) A satural mitmate	
(a) INI (b) KDX	(c) PEIN	(d) Acetyl nitrate	
4. SPWI stands for	(h) C	Comming nontials Misnes	2000
(a) Scanning Probe Microsoc	$\begin{array}{c} \text{opy} \\ \text{opy} \\ \text{opy} \\ \text{(b) S} \end{array}$	canning particle Micros	Mierosconu
5 A Nano biological reasonition as	opy (u) s mnonont whi	ch is involved in interes	Microscopy
5. A Nano biological lecognition co	inponent, win	ch is mvolved in interac	ting with the analyte
(a) Piosensor (b) Proba	(a) Nono bio	(d) 0	untum Dota
6 Nanoparticles of	(c) Nalio Di	an exposed to ultraviolet	light
(a)Cadmium selenide (b) Chrom	ium selenide	(c) Nickel selenide (d) (Sold
7 TOPO stands for		(c) Meker scientide (d) C	Joid
a) Trioctylphosphine oxalate	b) Triocty	Inhosphine oxide	
c) Trioctylphosphine oxalate	d) Trioctyln	hosphine selenide	
8 The most important property of n	anomaterials i	is	
a) Force b) friction c) pressure	d) temperature	
9. How many hydrogen atoms could	fit in a nanor	neter?	
a) Four b) One c) Five	d) Ten		
10. Which of the following is an exa	ample of top-c	lown approach for the p	reparation of
nanomaterials?	· · · · · · · · ·	TT	1
a) Gas phase agglomeration	b) Liquid phas	se growthc) Mechanical	grindingd) Ostwald
ripening			
1 0	SECTI	ION – B	
Answer any FIVE questions			$(5 \mathbf{x} 2 = 10)$
11. Define sensors			
12. Give the definition of Nano shel	ls		
13. Define nanoscale?			
14. What is transmitting?			
15. What is Ostwald ripening?			
16. What do you mean by TEM?			
17. Bulk gold is yellow but nano-go	ld is never ye	llow-why?	
	SECTI	ON - C	
Answer any THREE questions			$(3 \times 6 = 18)$
18. List out the difference between r	nanotechnolog	gy and Nano biology	
19. What is the role of cyclic voltam	imograms in i	nanosensors?	
20. What are the advantages of gold	nanoparticles	s in nanomedicine?	
21. Classify the nanomaterials in ter	ms of dimens	10nality	
22. How will you synthesis metal se	elenide nanopa		
	SECT	ION - D	(1 10 10)
Answer any UNE question	utialan	for the more set in a set if	$(1 \times 12 = 12)$
25. Discuss the properties of nanopa	uncies useful	for merapeutic application	IOHS /

24. Explain detail the synthesis and uses of semiconductor quantum dots.

I B.A / B.Sc NME

I Sessional Test II Semester Max. Marks: 50 Time: 2 Hours

CHEMISTRY IN MEDICINE (07NE21)

SECTION – A

Answer ALL questions	(10 x 1 = 10)
1. Main symptom which is observed for mercury poisoning is	CO1
a) Convulsions b) Nausea c) headache	d) Salivation
2. Which of the following disease can be prevented by giving triple medicine to	the infants CO2
a) influenza b) TB c) whooping cough d) meas	les
3. Flexneri bacillus is the microorganism that causes	CO2
a) amoebic dysentery b) bacillary dysentery c) both a) & b) d) non	e of the above
4. The phosphorous acid which is popularly known as 'brain tonics' is	CO3
a) Hypophosphorous acid (H ₃ PO ₂) b) Phosphoric acid (H ₃ PO ₄)	
c) orthophosporic acid (H_3PO_4) d) Pyrophosphoric acid (H_4P_2	J ₇)
5. Which of the following compound is used in photography:	CO3
a) Ferrous fumarate b) Ferric Ammonium Citrate	
c) Ferrous Gluconate d) Ferrous Sulphate	601
6. The name of the antidote used for acid poisoning is	C01
a) Milk of magnesia b) Acetic acid c) water d) Lime	CO 4
7. In Greek etymology, the word anaestnesia means	d) Doin nolioyon
8 Wall known loughing gas is	u) Faill Tellevel
b) $N_1 O_1$ b) $N_2 O_2$ c) NO_2 d) NO_2	04
9 The more potent natural product present in neem	CO5
a) Margosine b) Margosa c) Azadirachtin d) Lauric acid	COS
10 Tulsi plant is antidote for	CO5
a) Snake bite b) Bee bite c) Betel bite d) Mosquito bite	
SECTION – B	
Answer any FIVE questions	$(5 \ge 2 = 10)$
11. Define drug as quoted by World Health Organisation	CO1
12. What does the word "pharmacogensy" mean?	CO2
13. Write the formula of alum. Mention its uses.	CO3
14. Define Local anesthetics.	CO4
15. Write down the properties of diethyl ether	CO4
16. Draw the structure of Amethocaine	CO4
17. Write any two medicinal properties of neem	CO5
$\underline{SECTION} - \underline{C}$	
Answer any THREE questions	$(3 \times 6 = 18)$
18. Define first aid. What does a first aid box comprises of? Discuss its importa	ant rules. CO1
19. Write down the immediate treatment to be given for a) bleeding b) burns.	CO1
20. Explain the biological role of : a)sodium b)potassium c)calcium.	CO3
21. Explain any five characteristics of anaesthetics.	CO4
22. Write down the preparation steps of chloroform.	CO4
<u>SECTION – D</u>	
Answer any ONE question	$(1 \times 12 = 12)$
23. Explain in detail about insect and water borne diseases.	CO2
24. Briefly explain about the medicinal properties of Hibisscuss, Rosasinesis and	nd Tulasi. CO5

II B. Sc Chemistry

Dept. of Chemistry Vivekananda College Tiruvedakam West Date: 06 .04. 2019 III Sessional Test Semester IV Max. Marks: 25 Time: 1 Hour

CHEMISTRY IN ACTION- (07SB4A)

SECTION – A

Answer ALL questions

$(1 \times 5 = 5)$

- 1. The entropy of the rubber band _____ when it goes from the stretched state to natural state a) increases b) decreases c) doesn't change d) none of the above
- 2. . Amalgam is a substance made by combining _____ with another metal:
- a) mercury b) silver c) copper d) zinc
- 3. The main component of syngas is:
- a) CO b) CH₄ c) CO₂ d) H₂
- 4. The metal in its hydroxyl carbonate form, that was used as pigment by artists is::
- a) Pb b) Zn c) Tc d) Mo
- 5. Wood's metal is an alloy of
- a) bismuth b) tin c) lead d) all the above

<u>SECTION – B</u>

Answer any TWO questions

- 6. Why does a person who has undergone dental filling experience a discomfort.
- 7. Give two equations illustrating the decomposition of ammonium nitrate at high temperatures.

1

- 8. Explain the chemical phenomenon behind the death of King Nepolean.
- 9. State the theory behind the crumbling of papers.

SECTION – C

Answer any ONE questions

- 10. How cis-platin acts as anticancer drug.
- 11. Briefly discuss food irradiation.

SECTION – D

Answer any ONE question

- 12. Explain coordination compounds in living system.
- 13. Give a detailed note on the petroleum industry.

 $(1 \times 10 = 10)$

 $(1 \times 6 = 6)$

$(2 \times 2 = 4)$

Dept. of Chemistry Vivekananda College Tiruvedakam West Date: 05-04-2019 III Sessional Test VI Semester Max. Marks: 50 Time : 1 Hour

CHEMISTRY FOR COMPETITIVE EXAMINATIONS (07SB6A)

Answer ALL questions

(50 x 1 = 50 marks)

1.	In the Hofmann bromamide degradation reaction, the number of moles of NaOH and Br ₂ used per mole of
	amine produced are
	(a) four moles of NaOH and two moles of Br_2 (b) two moles of NaOH and two moles of Br_2
_	(c) four moles of NaOH and one mole of Br_2 (d) one mole of NaOH and one mole of Br_2
2.	On heating aliphatic primary amine with chloroform and ethanolic potassium hydroxide, the organic
	compound formed is
	(a) an alkanol (b) an alkane diol (c) an alkyl cyanide (d) an alkyl isocyanide
3.	Considering basic strength of amines in aqueous solution, which one has small pK_b value?
	(a) $(CH_3)_2NH$ (b) CH_3NH_2 (c) $(CH_3)_3N$ (d) $C_6H_5NH_2$
4.	Toluene is nitrated and the resulting product is reduced with tin and HCl. The product so obtained is diazotized
	and then heated with CuBr. The reaction mixture so formed contains
	(a) mixture of <i>o</i> - and <i>p</i> -bromotoluenes (b) mixture of <i>o</i> - and <i>p</i> -dibrombenzenes
_	(c) mixture of <i>o</i> - and <i>p</i> -bromoanilines (d) mixture of <i>o</i> - and <i>m</i> -bromotoluenes
5.	Which one of the following is strongest base in aqueous solution?
6	(a) trimethylamine (b) aniline (c) dimethylamine (d) methylamine (d) methylamine (A) and (D)
0.	In the chemical reaction, $CH_3CH_2NH_2 + CHCI_3 + 5KOH \rightarrow (A) + (B) + 5H_2O$, the compounds (A) and (B) are
	(a) C H CN and 2KCl (b) CH CH CONH and 2KCl
	(a) C_2H_5CN and $3KC1$ (b) $CH_3CH_2CONH_2$ and $3KC1$
7	Which one of the following method is neither meant for the synthesis nor for separation of amines?
7.	(a) Curtius method (b) Wurtz reaction (c) Hofmann method (d) Hinsherg method
8	An organic compound having molecular mass 60 is found to contain $C=20\%$ H=6.67% and N=46.67% while
0.	rest is ovgen. On heating, it gives NH_2 along with a solid residue. The solid residue gives violet colour with
	alkaline copper sulphate solution. The compound is
	(a) $CH_3CH_2CONH_2$ (b) $(NH_2)_2CO$ (c) CH_3CONH_2 (d) CH_3NCO
9.	On heating benzyl amine with chloroform and ethanolic KOH, product obtained is
	(a) benzyl alcohol (b) benzaldehyde (c) benzonitrile (d) benzyl isocyanide
10.	Glucose prolonged heating with HI gives
	(a) n-hexane (b) 1-hexene (c) hexanoic acid (d) 6-iodohexanal
11.	The formation of which of the following polymers involves hydrolysis reaction?
	(a) Nylon-6 (b) Bakelite (c) Nylon-6,6 (d) Terylene
12.	Thiol group present in
	(a) cystine (b) cysteine (c) methionine (d) cytosine
13.	Which of the vitamins given below is water soluble?
	(a) vitamin C (b) vitamin D (c) vitamin E (d) vitamin K
14.	Which one of the following bases is not present in DNA?
1.5	(a) quinoline (b) adenine (c) cytosine (d) thymine
15.	Which of the following compounds can be detected by Molisch's test?
16	(a) nitro compounds (b) sugars (c) amines (d) primary alconois
10.	(a) toutomorism (b) recommization (c) specific rotation (d) mutaratation
17	(a) factoments (b) factomization (c) specific for another (d) indiatoration
17.	(a) α -helical backbone (b) hydrophobic interaction
	(a) when a backbone (b) hydrophoble interaction (c) sequence of α -amino acids (d) fixed configuration of the polypeptide backbone
18	Insulin production and its action in human body are responsible for the level of diabetes. This compound
10.	belongs to which of the following categories?
	(a) a coenzyme (b) a hormone (c) an enzyme (d) an antibiotic
19.	Which base id present in RNA but not in DNA?
	(a) uracil (b) cytosine (c) guanine (d) thymine
20.	Complete hydrolysis of cellulose gives
	(a) D-fructose (b) D-ribose (c) D-glucose (d) L-glucose
21.	How many EDTA molecules are required to make an octahedral complex with a Ca ²⁺ ion?
	(a) 6 (b) 3 (c) 1 (d) 2
22.	Which of the following types of drugs reduce fever?
	(a) tranquiliser (b) antibiotic (c) antipyretic (d) analgesic
23.	Coordination compounds have great importance in biological systems. In this context, which of the following
	statements is incorrect?
	(a) chlorophyll is green pigment in plant and contain calcium
	(b) hemoglobin is red pigment in blood and contains iron
	(c) cyanogobalamine is vitamin B_{12} and contains cobalt

(d) carboxy peptidase-A is an enzyme and contains zinc

24. The compound formed in the positive test for nitrogen with the Lassaigne solution of organic compound is (a) $Fe_4[Fe(CN)_6]_3$ (b) $Na_3[Fe(CN)_6]$ (c) $Fe(CN)_3$ (d) $Na_4[Fe(CN)_5NOS]$ 25. Which of the following could act as a propellant in rockets? (a) liquid hydrogen+liquid nitrogen (b) liquid oxygen+liquid argon (c) liquid hydrogen+liquid oxygen (d) liquid nitrogen+liquid oxygen 26. The product formed when phthalimide is treated with mixture of Br₂ and strong NaOH solution is (b) phthalimide (a) aniline (c) phthalic acid (d) anthranilic acid 27. The gas which gas both oxidizing as well as reducing properties is (a) CO (b) SO_2 (c) H_2S d) PH₃ 28. A solid AB has NaCl structure. If the radius of cation A^+ is 110 pm, the maximum value of the radius of the anion B⁻ is (a) 240.5 pm (b) 410.6 pm (c) 315 pm (d) 265.7 pm 29. When $FeCl_3$ is dissolved in water it causes (a) a decrease in the H⁺ ions concentration (b) a decrease in the OH⁻ ions concentration (c) a decrease in pH (d) an increase in pH 30. If pH of 0.0001 M NaOH solution will be (a) 4 (b) 12 (c) 2 (d) 10 31. The compound with highest boiling point is (a) n-heptane (b) 2,2-dimethylpentane (c) 2-methylhexane (d) isoheptane 32. For a reaction A+B \rightarrow Product, the rate is given as k[A]^{1/3}[B]². The units of rate constant are (b) molL⁻¹s⁻¹ (c) mol^{-4/3}L^{4/3}s⁻¹ (d) $mol^{-2/3}L^{2/3}s^{-1}$ (a) $mol^{-2}L^2s^{-2}$ 33. Which of the following about wave function ψ , is not correct? (a) ψ may be real valed wave function (b) ψ may be in some cases be a complex function (c) ψ has a mathematical significance only (d) ψ is proportional to the probability of finding an electron 34. By heating which of the following nitrogen dioxide cannot be obtained? (c) $Cu(NO_3)_2$ (a) KNO₃ (b) $Pb(NO_3)_2$ (d) $AgNO_3$ 35. Lanthanoids and actinoids both have a tendency to form complexes. In which of these, this tendency is greater? (c) both have equal tendency (a) Lanthanoids (b) actinoids (d) actinoids does not form complex 36. Chemical substances used to cure mental diseases are called (c) analgesics (a) tranquilizer (b) antihistamines (d) antimicrobials 37. Which of the following has d^2sp^3 hybridization? (c) $[Co(H_2O)_6]^{2+}$ (d) $[PtCl_4]^{2-}$ (a) $[CoF_6]^{34}$ (b) $[Fe(CN)_6]^{3-1}$ 38. Which of the following is not involved in the formation of photochemical smog? (a) NO (b) O₃ (c) $C_x H_y$ (d) SO₂ 39. Copper sulphate reacts with KCN solution to form (a) Cu(CN) (b) $Cu(CN)_2$ (c) $K_3[Cu(CN)_4]$ (d) $K_4[Cu(CN)_6]$ 40. Which of the following is not an electrophilic reagent? (d) R-OH (c) SO_3 (a) NO_2^+ (b) BF₃ 41. If 195 mg/mL of K⁺ ions are present in human blood, then the molarity is (a) 4 M (b) 3 M (c) 2 M (d) 5 M 42. If the heat of a reaction at constant volume exceeds that at constant pressure and at 25 °C by 1785 cal, then the value of K_p/K_c for this reaction is (b) 6.8×10^{-5} (c) 6.4×10^{-9} (a) 68.3 x 10⁻⁻ (d) 6.35 43. AgCl and NaCl are colourless. NaBr and NaI are also colourless but AgBr and AgI are colored. This is due to (b) Ag⁺ has unpaired d-orbital (a) Ag^+ polarizes Br^- and I^- (d) none of these (c) Ag^+ depolarises Br^- and I^- 44. An element (X) forms compounds of the formula XCl₃, X₂O₅ and Ca₃X₂, but does not form XCl₅. Which of the following is the element X? (a) B (b) Al (c) N (d) P 45. p-toluidine and benzyl amine can be distinguished by (b) dye test (a) Sandmayer's reaction (c) Molisch test (d) Gattermann reaction 46. Shyam's monthly income is Rs.12000. He saves rs.1200. Find the percent of his savings and his expenditure (a) 10%, 80% (b) 10%, 90% (c) 80%, 10% (d) 90%, 10% 47. A train running at the speed of 60 km/hr crosses a pole in 9 seconds. What is the length of the train? (d) 150 metres (c) 324 metres (a) 120 metres (b) 180 metres 48. A, B and C can do a piece of work in 20, 30 and 60 days respectively. In how many days can A do the work if he is assisted by B and C on every third day? (a) 12 days (b) 15 days (c) 16 days (d) 18 days 49. The sum of ages of 5 children born at the intervals of 3 years each is 50 years. What is the age of the youngest child? (a) 4 years (b) 8 years (c) 10 years (d) 12 years 50. Today is Monday. After 61 days, it will be: (a) Wednesday (b) Saturday (d) Thursday (c) Tuesday ******

III-B.Sc. CHEMISTRY

Dept. of Chemistry Vivekananda College Tiruvedakam West Date: 06.04.2019Time: III Sessional Test VI Semester Max. Marks: 25 1 Hours

ANALYTICAL METHODS IN CHEMISTRY (07SB6F)

SECTION -A

Answer ALL questions

- - a) Pour water into acid b) Pour acid into water
- c) Add both at the same time d) Dilute with base and then add
- 4. Potential is applied between ----- and ----- electrode in cyclic voltammetry
 - a) reference only b) working and reference
 - c) working and counter d) counter and reference
- 5. If a chemical get into your mouth you should
 - a) spit it out b) rinse your mouth c) visit a doctor d) all of them

SECTION – B

Answer any TWO questions

- 6. What is the first aid measure for splashing of alkali in the eye?
- 7. Name some hazardous chemicals.
- 8. State Beer-Lambert law.
- 9. Write any two uses of CV.

SECTION -C

Answer any ONE question

- 10. List out the safety measurements while you are working in a laboratory.
- 11. Explain theimportance of analytical methods in qualitative and quantitative analysis

SECTION – D

Answer any ONEquestion

- 12. Discuss the rule of working with harmful substances.
- 13. Write the principle, electrodes and instrumentation of cyclic voltammogram.

 $(5 \times 1 = 5)$

 $(2 \times 2 = 4)$

 $(1 \times 6 = 6)$

 $(1 \times 10 = 10)$