Mount Carmel mission mat.hr.sec school
Kallakurichi

The set of questions asked in the
three govt.public questions paper
is unit wise

1.March 2020

2.Instant exam

3.September 2020

By
S .MANIKANDAN.,M.Sc.,B.Ed.,
PG ASST. IN CHEMISTRY
7708543401

1.metallurgy

One mark :-

1 . wolframite ore is separated from tinstone by the process of

electromagnetic separation **electromagnetic separation.** (mar20)

2.the incorrect statement among the following is

In the metallurgy of gold the metal is leached with dilute sodium chloride solution (ins ex20)

3.The metal which is used packing material for food items **Al** (ins ex20)

4.Extraction of gold involves leaching with cyanide ion Gold is later recovered by :

metal displacement with zinc. (sep20)

Other questions :-

1. Explain zone refining process (mar 20) (in p.no : 16)

2.What is the role of limestone in the extraction of iron from its oxide Fe_2O_3 (sep 20) (b/b : 3)

3.which type of ores can be concentrated by froth flotation method give

two example (sep 20) (b/b : 4)

4.Explain the following terms with suitable example (inst 20) (b/b : 11)

I) Gangue. II) slag

5.What are the difference between minerals and ores(inst 20) (b/b : 1)

2.P block elements 1

One mark :-

1. Fluorine – **strong oxidizing agent** (mar20)

Borax-**Identification of coloured metal ions**

Aluminium-**Most abundant element**

Sulphur-**Chalcogen present in volcanic ashes**

2.Sodium salt of tetraboric acid is known as **$Na_2B_4O_7.10H_2O$** (ins ex20)

Other questions :-

1.there is only marginal difference in decrease in ionisation enthalpy from aluminium to thallium explain Why ? (mar 20) (in.p.no : 29)

2.Write any two condition for catenation (mar 20) (B/ B : 5)

3.A hydride of second period alkali metal (A) on reaction with compound of boron B in the presence of ether to give a reducing agent C . Identify A B and c (sep 20) (B/ B : 18)

4. How is potash alum prepared (sep 20) (in.p.no : 40)

5.what are the factors responsible for the anomalous behaviour of first element of the p-block ? (inst 20) (B/B :1)

6.What is catenation ? (inst 20) (B/ B : 5)

3.P block elements 2

One mark :-

1. Formula for hyponitrous acid **$H_2N_2O_2$.** (mar20)
2. **Phosphine** is used for producing smoke screen as it gives large smoke (ins ex20)
3. Inorganic benzene is **$B_3N_3H_6$.** (sep20)
4. The oxidation state of chlorine in. Cl_2O_7 is **+7.** (sep20)

Other questions :-

1.How is bleaching powder prepared ? Mar 2020 (in.p.No : 85)

2.write the molecular formula and draw the structure of sulphurous acid marshals acid (mar 20) (in.p.no ; 80,81)

3. What type of hybridization is found in the following (sep 20)

I) BrF. Ii) BrF_5. Iii) BrF_3. (B/B : 22)

4.Powdered $CaCO_3$ reacts much faster with dilute HCl than with the same mass of $CaCO_3$ as marble give Reason ? (sep 20) (in.p.no : 86)

5.explain the Deacons's process for manufacture of chlorine (sep 20) (in.p.no : 83)

6.Sulphuric acid dibasic acid prove it (sep 20) (in.p.no : 78)

7.Give the uses of helium(inst 20) (B/ B : 7)

8.Write the balanced equation for the overall reaction of chlorine with cold NaOH and hot NaOH (inst 20) (B/ B : 9)

9.Write a short note on Holmes signal(inst 20) (in.p.no : 70)

10.HF can't be stored in glass bottle (mar 20) (in.p.no : 88)

4.Transition and inner transition elements

One mark :-

1. The transition element which has only +3 oxidation state is **Sc** (mar20)

2.The actual position of lanthanides in the periodic table is at **group number 3 period number 6** (ins ex20)

Other questions :-

1. Write chromyl chloride test (mar 20) (in.p.no : 114)

2.Classify the following elements into d block and f block elements March 2020

a)tungston. b) ruthenium c) promethium. d) einsteinium (in.p.no : 101)

3.What is lanthanide or lanthanoide contraction explain its consequences (sep 20) (B/B :9)

4.What are interstitial compounds(inst 20) (B/B : 11)

5 .which metal in the 3d series exhibits + 1 oxidation State most frequently and why ? (inst 20) (B/B : 28)

5.Coordination chemistry

One mark :-

1.Fac-mer isomerism is shown by : **$[Co(NH_3)_3Cl_3]$** (ins ex20)

2 .[Ni(CO)4] - **tetrahedral** (sep20)

[Pt(NH3)4]2+ **- square planar**

[Fe(Co)5] **- trigonal bipyramidal**

[Co(NH3)6]3+. – **octahedral**

3.The magnetic moment of 1.73 BM will be shown by one among the following

[Cu(NH3)4]2+. (sep20)

Other questions

1.write any two hydrate isomers of the complex with the molecular formula $CrCl_3\ 6H_2O$ (mar 20) (in.p.no : 143)

2.$[Sc(H_2O)_6]^{3+}$ IS COLOURLESS EXPLAIN (mar 20) (B/B : 10)

3. Write the IUPAC name of the following (mar 20) (in.p.no : 140)

I) $[Ag(NH_3)_2]^+$ ii).$[Co(NH_3)_5Cl]^{2+}$

4.Calculate the magnetic moment and magnetic property of $[CoF_6]^{3-}$ (mar 20) (in.p.no : 151)

5. Give the difference between double salt and coordination compound (sep 20) (B/B : 17)

6.In an octahedral crystal field draw the figure to show splitting of d orbitals (B/B ; 13)

7.Indicate the possible type of isomerism for the following complexes (sep 20)

a).$[Co(en)_3]^{3+}$ (in.p.no : 146) b).$[Pt(NH_3)_2Cl_2]^{2+}$ (in.p.no : 143)

8.mention the metal complex and its metal ions are used in biological system(inst 20) (in.p.no : 167)

9. write the postulates of werner's theory(inst 20) (B/B : 18)

6.Solid state

One mark :-

1.The vacant space in BCC lattice unit cell is **32%** (mar20)

2.Packing efficiency of body centred cubic (BCC) **68%** (ins ex20)

3.the formula used to identify density of unit cell

$\rho = nM/a^3NA$ (sep20)

Other questions

1. If the th number of close packed sphere is 6 calculate the number of octahedral voids and tetrahedral voids generated (mar 20) (in.p.no : 190)

2. Write a note on frenkel defect (mar 20) (B/B : 25)

3.differentiate between crystalline solid and amorphous solid (sep 20) (B/B : 3)

4.If the Radius ratio of the compound is between 0.155 to 0.225 find out the coordination number and structure of the compound. (sep 20) (in.p.no : 192)

5.Distinguish between isotropy and anisotropy in solids(inst 20) (in.p.no : 178)

6.Explain Scotty defect(inst 20) (B/B : 9)

7.Chemical kinetics

One mark :-

1.the required for the reactant concentration to reach one half of its initial value is called **half life period** (mar20)

2. The rate constant of a reaction is 5.8 x $10^{-2}s^{-2}$ .the order of reaction is **first order** (ins ex20)

Other questions:-

1.Derive integrated rate law for a first order reaction A →product (mar 20) (in.p.no : 212.)

2.the rate constant for a first order reaction is 1.54 x 10^{-3} s^{-1} . calculate its half life time (sep 20) (in.p.no : 23)

3. The rate of the reaction. x + 2y →product is 4 x 10^{-3} mol L^{-1} s^{-1} if [x] =[y]=0.2M and rate constant at 400k is 2 x 10^{-3} s^{-1} what is the overall order of the reaction ? (inst 20) (in.p.no : 211)

4.Explain the effect of catalyst on reaction rate with an example(inst 20) (B/ B : 9)

8.Ionic equilibrium

One mark :-

1.The aqueous solutions of sodium formate, anilinium chloride and potassium cyanide respectively.

Basic acidic basic. (mar20)

2 Conjugated base for bronsted acids H_2O and HF are : **OH^- and F^- respectively** (ins ex20)

3.The pH of aqueous solution is zero. the solution is **strongly acidic** (sep20)

Other questions :-

1. Derive henderson equation (mar 20) (in.p.no : 18.)

2.Write the pH value of following substance (mar 20) (in.p.no : 10.)

a).Vinegar b).black coffee. C). packing soda s d).oapy water

3.Define buffer action (sep 20) (in.p.no : 16)

4.Define common ion effect (sep 20). (B/B : 11)

5.Derive an expression for ostwald dilution law (sep 20) (B/B : 12)

6.Identify the conjugate acid base pair for the following reaction in aqueous solution (sep 20) (B/B : 3)

$HS^-(aq) + HF \rightleftharpoons F^-(aq) + H_2S(aq)$

$HPO_4^{2-} + SO_3^{2-} \rightleftharpoons PO_4^{3-} + HSO_3^-$

7. Calculate the pH of 0.1 M CH_3COONa solution ($_pka$ for CH_3COOH is 4.74) (inst 20) (in.p.no : 24)

8. Define ionic product product of water give its value at room temperature(inst 20) (B/B : 10)

9.what are Lewis acid and bases give one example for each (mar 20) (B/ B : 1)

10.Glassify the following into Lewis acid and Lewis bases(inst 20) (in.p.no : 5)

(A) BF_3 (B) CO_2 (C) MgO (D) CH_3^-

9.Electrochemistry

One mark :-

1.how many faradays of electricity are required for the following reaction to occur $MnO^{4-} \rightarrow Mn^{2+}$.

5F (mar20)

2. Laptops have **lithium ion battery.** (mar20)

3.In H2-O2 fuel cell the reaction occurs at cathode is

$O_2(g) + 2H_2O(l) + 4e^- \rightarrow 4OH^-(aq)$ (sep20)

Other questions :-

1.how are metals protected from corrosion by cathodic protection method (mar 20) (in.p.no : 61.)

2.A conductivity cell has two platinum electrodes separated by a distance of 1.5 cm and the cross sectional area of each electrode is 4.5 sq cm using this cell the resistance of 0.5 N electrolytic solution was measured as 15 ohms .find the specific conductance of the solution (mar 20) (in.p.no : 35)

3.State kohlrausch law and explain any one of the application (sep 20). (B/B : 3)

4.A solution of silver nitrate is electrolysed for 30 minutes with a current of 2 ampere calculate the mass of silver deposited at the cathode. (inst 20) (in.p.no : 55)

5.Derive an expression for Nernst equation(inst 20) (B/B : 24)

10.Surface chemistry

One mark :-

1.when ΔS <0 and TΔS is negative : **adsorption is exothermic** (ins ex20)

2. The mechanism proposed for the enzyme catalysis reaction is

$$E + S \rightleftharpoons ES \rightarrow P + E$$

Other questions :-

1.Write this dispersed phase and dispersion medium of butter (mar 20) (in.p.no : 88.)

2.Mention the shape of the following colloidal particles (in.p.no : 93)

I).As2s3 b).blue gold sol c).tungstic acid sol

3.give any three difference between chemisorption and physisorption (mar 20) (B/B : 2)

4.Write a note on tyndall effect (sep 20) (in.p.no : 93.)

5.Write any five characters of catalysts (sep 20) (in.p.no : 78.)

6.What is inversion of phase ? give an example(inst 20) (in.p.no : 98)

7.Identify the auto catalyst in the following reaction(inst 20) (in.p.no : 79)

$CH_3COOC_2H_5 + H2O. \rightarrow CH_3COOH + C_2H_5OH$

$2AsH_3 \rightarrow 2As + 3H_2$

8.Name the factors affecting adoption(inst 20) (in.p.no : 72)

11.Hydroxy compounds and ethers

One mark :-

1.Williamson synthesis of preparing dimethyl ether is a/an

S_N2 reaction (mar20)

2.the major product obtained when phenol reacts with corn H2SO4 at 280 K is :

O-phenol sulphonic acid (mar20)

3.in the preparation of ether by Williamson synthesis using primary alkyl halide involves : **S_N2 mechanism** (ins ex20)

4.cold dilute alkaline KMno4 is known as. **Bayer's reagent** (sep20)

5. The common name of 1,2,3 trihydroxy benzene is : **pyrogallol** (sep20)

Other questions :-

1. Why is C-O-C bond angle in ether slightly greater than the bond angle (mar 20) (in.p.no : 133.)

2. Give the coupling reaction of phenol (mar 20) (in.p.no : 131)

3.how will you prepare the following by using grignard reagent (mar 20)

a).Propan-1-ol b).propan-2-ol (in.p.no : 108)

4. Mention the mechanism in the following reactions (sep 20) (in.p.no : 137.)

I).One mole of HI reacts with methoxy ethane

ii).One mole of HI reacts with 2 methoxy 2 -methylpropane

5.How to distinguish 1^0 , 2^0 , and 3^0 alcohol

by victor Meyer test (sep 20) (in.p.no : 111)

6.Convert glycerol to acrolein(inst 20) (in.p.no : 121)

7.Explain auto oxidation of ethers(inst 20) (in.p.no : 137)

8.What is Baeyer's regent ? how it is useful to convert

ethene to ethane 1 2 diol (inst 20) (in.p.no : 110)

12.Carbonyl compounds and carboxylic acids

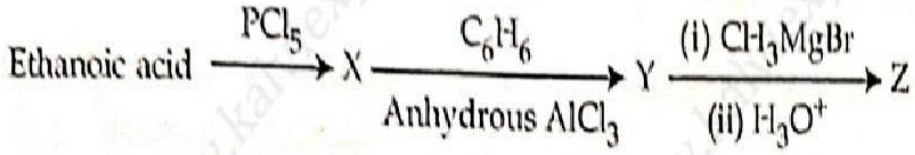
ONE MARK :-

1.Assertion : p-N,N- dimethyl amino benzaldehyde undergoes benzoin condensation

Reason : the aldehydic(CHO)group is meta directing. (mar20)

Both assertion and reason are true but reason is not the correct explanation of assertion

2. Predict the product Z in the following series of reactions



$(CH_3)_2C(OH)C_6H_5$ (ins ex20)

3.**Acetone** is used in the manufacture of thermosoftening plastic perspex (sep20)

Other questions :-

1.name the catalyst used in rosenmund reduction and state its importance (mar 20) (in.p.no : 151)

2.formic acid reduces tollen's reagent whereas acetic acid does not reduce

give reason (mar 20) (in.p.no : 177)

3. What is formalin what is its use (mar 20) (in.p.no : 167)

4. What is urotropine how it is prepared (sep 20) (in.p.no : 158)

5.Write the test for carboxylic acid group (sep 20) (in.p.no : 177.)

6.Arrange the following in the increasing order of relative reactivity of acid derivative and mention the reason alone (sep 20) (in.p.no : 180.)

$CH_3COOC_2H_5$ CH_3COCl CH_3CONH_2 $CH_3COOCOCH_3$

7. Explain Benedict's solution test(inst 20) (in.p.no : 167)

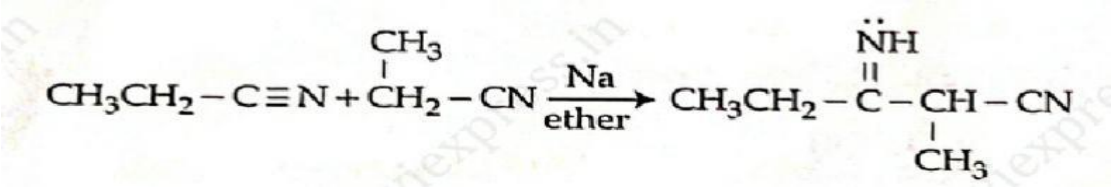
8.Write the mechanism of aldol condensation reaction(inst 20) (in.p.no : 161.)

13.Organic nitrogen compounds

One mark :-

1.Which one of the following is most basic **2, 4-dimethyl aniline** (mar20)

2



The above reaction is : **Levine and Hauser acetylation** (ins ex20)

3.C6H5N2Cl. Cu2Cl2/ HCl C6H5Cl. +. N2 this reaction is known as **Sandmeyer reaction** (sep20)

Other questions :-

1. How is chloropicrin prepared (mar 20) (in.p.no : 203)

2 what is gomberg reaction explain (mar 20) (B/B : 9 IX)

3. Identify A and B (mar 20). (in.p.no : 208.)

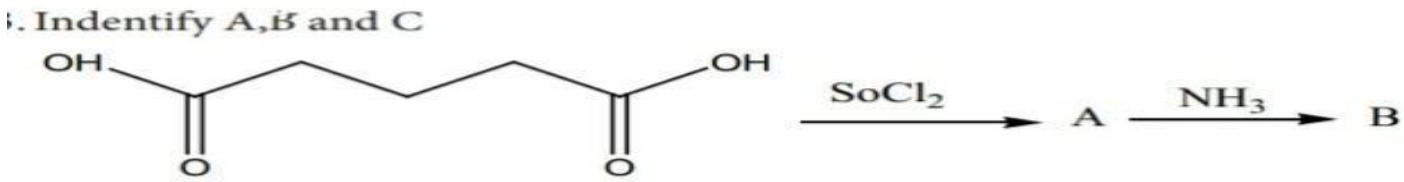
A. Na(Hg)/C2H5OH./4[H] CH3-CH2-NH2

B Na(Hg)/C2H5OH./4[H] CH3-NH-CH3

4.Aniline does not undergo friedel crafts reaction give reason (sep 20) (B/B : 1)

5.New short note on Gabriel phthalimide synthesis (sep 20) (B / B : 13)

6. (sep 20)



7. How is aryl halide prepared by using Cu_2Cl_2 /HCl (or) Cu_2Br_2/HBr. ? (inst 20) (in.p.no : 220)

8. name the reducing agent used in the reduction of nitrobenzene to the following compounds(inst 20) (B /B : 4)

A).Aniline

B).phenyl hydroxylamine

C).Nitroso benzene

D).mustard oil reaction (B /B : 6 vi)

9.write mustard oil reaction (inst 20) (B /B : 6 vi)

14.Biomolecules

One mark :-

1.If one strand of the DNA has the sequence ATGCTTGA then the sequence of complementary strand would be **TACGAACT.** (mar20)

2.Cheilosis is a vitamin deficiency disease caused by **vitamin B2** (ins ex20)

3. Glucose and mannose are epimers at **: C2 carbon** (sep20)

Other questions :-

1. How are proteins classified based on their structure explain (mar 20) (in.p.no : 254)

2.What is glycosidic linkage (mar 20) (in.p.no : 247)

3. How are RNA molecules classified ? explain (sep 20) (in.p.no : 264)

4. Write a note on denaturation of proteins(inst 20) (B/B : 8)

5. Write any three biological importance of lipids(inst 20) (in.p.no : 258)

6. Name the vitamins whose deficiency causes (sep 20) (in.p.no : 260)

A) Rickets B).scurvy

15.Chemistry in everyday life

One mark :-

1.The medicinal value of drugs is measured in terms of its **Therapeutic Intex.** (mar20)

2. Major tranquilizers – **clozapine** (ins ex20)

Analgesics – **Aspirin**

NSAIDs – **Non steroidal anti-inflammatory drug**

Intravenous general anaesthetics – **propofol**

3.Amide- linked local anesthetics is **Lidocaine** (sep20)

Other questions :-

1. State any three advantage of food additives (mar 20) (in.p.no : 283)

2. What is vulcanization (mar 20) (B/B : 18)

3.. Give a brief account antioxidants (sep 20) (in.p.no : 283)

4.How do you classify the following into various class of drugs (sep 20)

a).Milk of magnesia b).Aspirin (in.p.no : 278,279,280)

c).penicillin d).procaine

5.How is neoprene prepared ? (inst 20) (in.p.no : 292)

6.How to antiseptics differ from disinfectants ? (inst 20) (B/ B : 5)

"Life is nothing without chemistry

All are made up of atoms and molecules"

May be any comments :-

S.MANIKANDAN.M.Sc.B.Ed.,

PG ASST. IN CHEMISTRY

Mob :7708543401 mail : yazimani@gmail.com

MOUNT CARMEL MISSION MAT.HR.SEC. SCHOOL

KALLAKURICHI

www.Padasalai.Net

படங்களை தொடுக! பாடசாலை வலைதளத்தை சமூக ஊடகங்களில் பின்தொடர்க!! உடனுக்குடன் புதிய செய்திகளை Notifications-ல் பெறுக!

Zoom Touch Below Links Download!

12th Standard	Syllabus	Books	Study Materials – EM	Study Materials - TM	Practical	Online Test (EM & TM)
	Monthly Q&A	Mid Term Q&A	Revision Q&A	PTA Book Q&A	Centum Questions	Creative Questions
	Quarterly Exam	Half Yearly Exam	Public Exam	NEET		

11th Standard	Syllabus	Books	Study Materials – EM	Study Materials - TM	Practical	Online Test (EM & TM)
	Monthly Q&A	Mid Term Q&A	Revision Q&A	Centum Questions	Creative Questions	
	Quarterly Exam	Half Yearly Exam	Public Exam	NEET		

10th Standard	Syllabus	Books	Study Materials - EM	Study Materials - TM	Practical	Online Test (EM & TM)
	Monthly Q&A	Mid Term Q&A	Revision Q&A	PTA Book Q&A	Centum Questions	Creative Questions
	Quarterly Exam	Half Yearly Exam	Public Exam	NTSE	SLAS	

9th Standard	Syllabus	Books	Study Materials	1st Mid Term	2nd Mid Term	3rd Mid Term
	Quarterly Exam	Half Yearly Exam	Annual Exam	RTE		

8th Standard	Syllabus	Books	Study Materials	1st Mid Term	2nd Mid Term	3rd Mid Term
	Term 1	Term 2	Term 3	Public Model Q&A	NMMS	Periodical Test

7th Standard	Syllabus	Books	Study Materials	1st Mid Term	2nd Mid Term	3rd Mid Term
	Term 1	Term 2	Term 3	Periodical Test	SLAS	

6th Standard	Syllabus	Books	Study Materials	1st Mid Term	2nd Mid Term	3rd Mid Term
	Term 1	Term 2	Term 3	Periodical Test	SLAS	

1st to 5th Standard	Syllabus	Books	Study Materials	Periodical Test	SLAS	
	Term 1	Term 2	Term 3	Public Model Q&A		

Exams	TET	TNPSC	PGTRB	Polytechnic	Police	Computer Instructor
	DEO	BEO	LAB Asst	NMMS	RTE	NTSE

Portal	Matrimony	Mutual Transfer	Job Portal

Volunteers	Centum Team	Creative Team	Key Answer Team

Downloads	LESSON PLAN	Department Exam	Income Tax	Forms & Proposals	Fonts	Downloads
	Proceedings	GO's	Regulation Orders	Pay Orders	Panel	

Padasalai – Official Android App – Download Here

Kindly Send Your Study Materials, Q&A to our Email ID – Padasalai.net@gmail.com