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(To be filled in by the candidate)

**Chemistry****H.S.S.C (12<sup>th</sup>)-A-2022**

Time : 20 Minutes

Paper : II

Group: I

Objective – (ii)

Marks : 17

Ch-III

Paper Code 

8	4	8	3
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302-91-22

**Note:** - You have four choices for each objective type question as A, B, C and D. The choice which you think is correct; fill that circle in front of that question number in your answer book. Use marker or pen to fill the circles. Cutting or filling up two or more circles will result no mark.

**SECTION-A**

Q.1	Questions	A	B	C	D
1.	Which woody raw material is used for the manufacture of paper pulp?	Cotton	Bagasse	Poplar	Rice straw
2.	Ecosystem is a smaller unit of:	Lithosphere	Hydrosphere	Atmosphere	Biosphere
3.	A single chloride free radical can destroy how many Ozone molecules:	100	100000	10000	10
4.	The correct statement is:	Metallic character increases down the group	Metallic character increases from left to right along a period	Metallic character remains same from left to right along a period	Metallic character remains same down the group
5.	Chile saltpetre has the chemical formula:	NaNO <sub>3</sub>	KNO <sub>2</sub>	Na <sub>2</sub> B <sub>4</sub> O <sub>7</sub>	Na <sub>2</sub> CO <sub>3</sub> .H <sub>2</sub> O
6.	The chief ore of Aluminum is:	Na <sub>3</sub> AlF <sub>6</sub>	Al <sub>2</sub> O <sub>3</sub> .2H <sub>2</sub> O	Al <sub>2</sub> O <sub>3</sub>	Al <sub>2</sub> O <sub>3</sub> .H <sub>2</sub> O
7.	Ketones are prepared by the oxidation of:	Primary alcohol	Secondary alcohol	Tertiary alcohol	All of these
8.	A carboxylic acid contains:	A hydroxyl group	A carboxyl group	A hydroxyl and carboxyl group	A phenolic group
9.	Which of these polymers is synthetic polymer?	Animal fat	Starch	Cellulose	Polyester
10.	Among the group VA elements, the most electronegative element is:	Sb	N	P	As
11.	Chlorine heptaoxide (Cl <sub>2</sub> O <sub>7</sub> ) reacts with water to form:	Hypochlorous acid	Chloric acid	Perchloric acid	Chlorine and Oxygen
12.	Which of the given is a typical transition metal?	Sc	Y	Ra	Co
13.	In, t-butyl alcohol, the tertiary carbon is bonded to:	Two hydrogen atoms	One hydrogen atom	Three hydrogen atoms	No hydrogen atom
14.	Formula of Chloroform is:	CH <sub>3</sub> Cl	CCl <sub>4</sub>	CH <sub>2</sub> Cl <sub>2</sub>	CHCl <sub>3</sub>
15.	Aromatic hydrocarbons are the derivatives of:	Normal series of paraffins	Alkene	Benzene	Cyclohexane
16.	When CO <sub>2</sub> is made to react with Ethyl Magnesium Iodide, followed by acid hydrolysis, the product formed is:	Propane	Propanoic acid	Propanal	Propanol
17.	Which compound will have maximum repulsion with H <sub>2</sub> O?	C <sub>6</sub> H <sub>6</sub>	CH <sub>3</sub> -CH <sub>2</sub> -OH	CH <sub>3</sub> -CH <sub>2</sub> -CH <sub>2</sub> -OH	CH <sub>3</sub> -O-CH <sub>3</sub>

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**Chemistry****H.S.S.C (12<sup>th</sup>)-A-2022**

Time : 2:40 Hours

Paper : II

Group: I

Subjective Suol-92-22 Marks : 68

Note: Section B is compulsory. Attempt any 3 questions from Section C.

**SECTION-B**

2. Write short answers to any Eight parts.

(8 x 2 = 16)

- i. Why I.E of inert gases is maximum along the period?
- ii. The hydration energies of different ions are in the given order  $Al^{3+} > Mg^{2+} > Na^+$  Give reason.
- iii. Why aq. solution of sodium carbonate is alkaline in nature?
- iv. What is milk of Magnesia? Give its use as medicine.
- v.  $SiO_2$  exists in solid state while  $CO_2$  in gaseous state. Give reason.
- vi. Give four uses of Sodium Silicates.
- vii. Give two reactions in which nitrous acid ( $HNO_2$ ) behaves as oxidizing agent.
- viii. What is Aqua Regia, how does it dissolve gold?
- ix. What is Stadelers process? Give its reaction.
- x. What is Sacrificial corrosion?
- xi. Define micronutrients. Give examples.
- xii. What types of reactions taking place in first 24 hours during setting of cement?

3. Write short answers to any Eight parts.

(8 x 2 = 16)

- i. Describe the term "available chlorine" with reactions.
- ii. How Bleaching powder is prepared by Hasenclever's Method?
- iii. What are homocyclic and heterocyclic compounds. Give one example of each.
- iv. Write down the structural formulas of (i) Naphthalene (ii) Anthracene.
- v. How will you synthesize the following compounds starting from ethyne? (i) Oxalic acid (ii) Acrylonitrile.
- vi. How does propyne react with the given reagents? (i)  $AgNO_3/NH_4OH$  (ii)  $Cu_2Cl_2/NH_4OH$
- vii. Identify A and B.  $CH_3CH_2CH_2OH \xrightarrow{PCl_5} A$   $A \xrightarrow{Na/Ether} B$ .
- viii. Give IUPAC names of the given compounds. (a)  $CH_2Cl_2$  (b)  $\begin{array}{c} C H_2 - C H_2 \\ | \quad \quad | \\ Br \quad \quad Br \end{array}$
- ix. How will you convert?  $CH_3 - CH_2 - Br \longrightarrow CH_3COOC_2H_5$
- x. What is meant by Rancidity of fats and oils?
- xi. Demonstrate Hardening of Oils with example.
- xii. Describe condensation polymerization with example.

4. Write short answers to any Six parts.

(6 x 2 = 12)

- i. Give names and possible isomeric structures of xylenes.
- ii. Why benzene is less reactive than alkenes?
- iii. Absolute alcohol cannot be prepared by fermentation process, Why?
- iv. How would you convert phenol into cyclohexanol and picric acid?
- v. Write down any four uses of formaldehyde.
- vi. How carboxylic acids can be prepared by the hydrolysis of esters?
- vii. Describe the synthesis of amino acid by Strecker method.
- viii. Write down necessary conditions for the formation of smog.
- ix. How detergents are threat to aquatic animal life?

**SECTION-C****(EACH QUESTION CARRIES EIGHT (8) MARKS)**

5. (a) Define ionization energy. How does it vary in groups and periods in the periodic table? 4
- (b) Define semi-conductor. Write two properties and two uses of semiconductor. 4
6. (a) Describe the commercial preparation of Sodium by Down's cell. 4
- (b) What is corrosion? Explain the electrochemical theory of corrosion 4
7. (a) Describe any four features of organic compounds. 1x4
- (b) Define alkyl halides, how are they prepared from alcohols. 1+3
8. (a) Define polymerisation. Explain the linear polymerisation of ethyne upto the formation of Neoprene. 4
- (b) How does acetaldehyde react with? 4
- (i) HCN (ii)  $NaHSO_3$  (iii)  $NH_2OH$  (iv)  $H_2NNH_2$
9. (a) Give the reaction of phenol with (i) HCHO (ii)  $Br_2$  (iii)  $H_2/Ni$  2+1+1
- (b) Give the reaction mechanism of: (i) Nitration of benzene (ii) Sulphonation of benzene. 2+2