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$$\boxed{} + \boxed{} = \boxed{}$$

योग पूर्व पृष्ठ

पृष्ठ 2 के अंक

कुल अंक



प्रश्न क्र.

Answer of Ques no - 01

(a) (iv) Schottky defect.

(b) (ii) Ferromagnetic.

(iii) Sodium ethoxide.

(iv) Soap.

(c) (iv) HF.

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Answer of Ques no - 02

(a) Doping.

(b) $k = Ae^{-E_a/RT}$

(c) H_2SO_4

Primary amine (1° amine).

(c) Amino acids.

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पृष्ठ 3 के अंक

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Answer of Quesno- 03.

(a) ~~Electrons~~

(b) ~~Argon~~

~~Emulsion~~

~~Tetraethyl lead $(C_2H_5)_4Pb$~~

~~fibrin Fibrinogen~~

Answer of Ques - 04

(a) Diazonium salt

$C_6H_5N_2Cl$

(b) Gas mask

Adsorption of poisonous gases

(c) Philosopher wool

ZnO

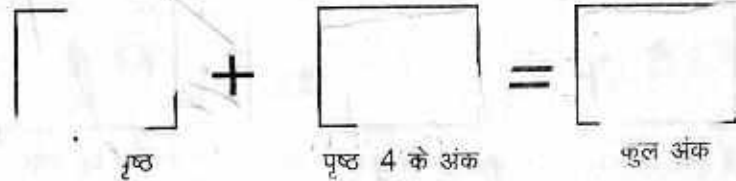
Astatine

Radioactive halogen

(e) T.N.B.

Explosive

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प्रश्न क्र.

Ques no - 05.

Electrophoresis - "It is phenomenon of movement of particles of colloidal solution toward an electrode under the influence of electric field is called electro-phoresis."

In this colloidal particle moves toward that electrode which carry opposite charge to that of colloid particle.

Ques no - 06.

All the halogens are strong oxidising agents because their electronic configuration of outer shell is $ns^2 np^5$, i.e. only one electron less than nearest inert gas. So, they have a high tendency to accept electron and due to high electronegativity and small size, the halogens are strong oxidising agents.

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योग : पृष्ठ

पृष्ठ 5 के अंक

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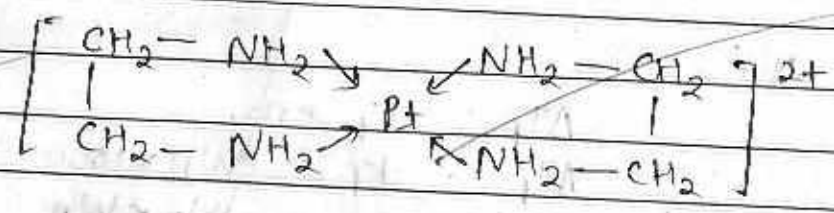


प्रश्न क्र.

Ques no - 07

chelates - when multidentate ligand attached with central metal ion with more than one atoms, then they form ring like structure, this is called chelating ring and the metal is called metal chelate.

eg : ethylenediamine (en), a bidentate ligand.



Ques no - 08

deficiency disease	Simple name	chemical name
sterility	Vitamin E	α -Tocopherol
Non-clotting of blood	Vitamin K	Phylloquinone

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Ques no. 10

(i) Osmotic pressure :- "It is the external Hydrostatic pressure applied on the solution in order to stop the further process of osmosis is called osmotic pressure".

Osmotic pressure is directly proportional to the molecule of solute. It is represented by π

(ii) Van't Hoff factor,

Van't Hoff, a scientist studied on extent of association or dissociation of molecules of solute in a solution,

Van't Hoff factor represented by 'i'.

$$i = \frac{\text{Normal (theoretical) Molecular mass (observed)}}{\text{Calculated molecular mass}}$$

or

$$i = \frac{\text{Calculated colligative property}}{\text{Normal colligative property}}$$

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योग पूर्व पृष्ठ

पृष्ठ 8 के अंक

कुल अंक



प्रश्न क्र.

(ii) Molal ^{freezing} depression constant: It is equal to the depression in freezing point of a solution in which one gram of solute

(iii) Molal freezing depression constant:

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E "It is equal to the depression of freezing point of solution in which one mole of solute dissolve in 1 kg of solvent".

that means molal depression constant of freezing point is equal to the depression of freezing point which molality is unity.

$$\Delta T_f = K_f m$$

when $m = 1 \text{ mole/kg}$

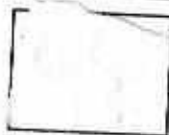
$$\Delta T_f = K_f$$

where,

ΔT_f = depression in freezing point

K_f = Molal depression constant

m = Molality



+

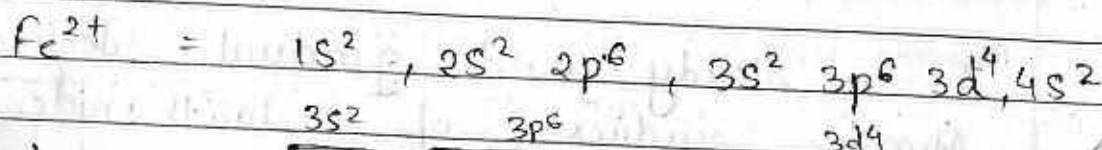


11



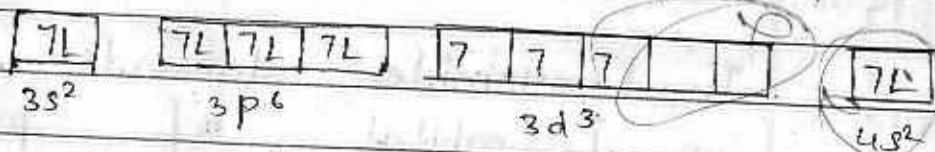
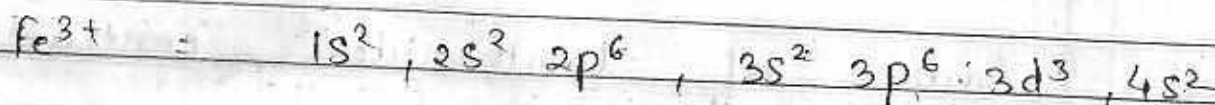
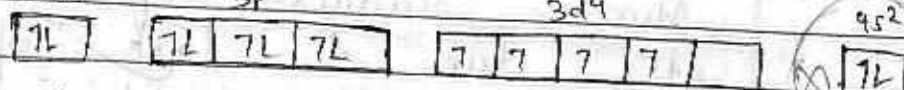
Answer of Quesno-11.

electronic configuration of Fe^{2+} and Fe^{3+} ions



electron in $4s^2$ $3d^4$ $3p^2$

ground state, in valence shell, 7 ~~penultimate~~ penultimate shell.



Fe^{2+} ion is more paramagnetic. This is because it contains more number of unpaired electron in 3d orbital. So when it is placed in external magnetic field it is attracted by the external magnetic field.



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प्रश्न क्र.

Ques no - 12.Lanthanide Contraction:

"It is steady and gradual decrease in Atomic radius of lanthanide elements due to lack of screening effect. is called lanthanide contraction".

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Cause of lanthanide contraction.

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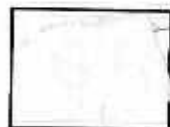
E

In lanthanide elements, electrons are filled in f-orbital of pre-penultimate shell and the size of f-orbital is diffused, so does not cause screening effect or it has poor shielding effect due to which effective nuclear charge increases with the increase in atomic number and attraction force on the outermost shell is also increases. So, gradually size and that means atomic radius decreases.

This causes various changes in properties of lanthanide.

(ii) due to lanthanide contraction it is difficult to separate the lanthanide elements.

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Answer of Ques no- 13.

difference between, molecularity and order of Reaction.

Molecularity

order of Reaction

1. It is total number of Reactants participating in a rate determining step.

It is the sum of power of the on the concentration in rate law expression.

2. It is theoretically based.

It is experimentally based.

It does not give information about the mechanism of reaction.

It gives information about the mechanism of reaction.

3. Its value is always a whole number but not zero or "fractional".

Its value may always be zero, fractional or any other whole number.

It does not show the relation between the concentration of Reactant and Rate of Reaction.

It shows the relation between concentration of Reactant and Rate of Reaction.

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योग पूर्व पृष्ठ

पृष्ठ 12 के अंक

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प्रश्न क्र.

Answer of Ques no-14

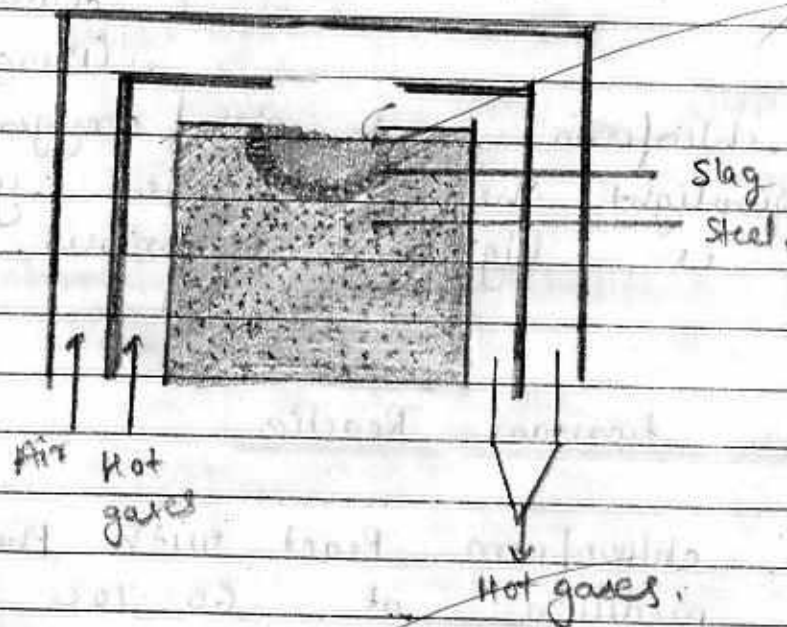
Siemens Martin Process of manufacturing of steel.

It is the process of Manufacturing of a steel in which oxidation does not occur by air but the oxidation is done by haematite.

It is a special type of furnace which have short sallow & open bottom. It is inner lined by SiO_2 for acidic impurities and by CaO or MgO for basic impurities. In this, it is heated with the producer gases and about 1800°C is developed in this furnace. 70% cast iron, 20-30% scrap iron and haematite is added and then preheated producer gases enter in the furnace and about 1800°C temp. is developed. Then impurities comes out from the furnace in the form of oxidised form like Carbon comes out as CO and sulphur as SO_2 and other impurities like Magnesium, phosphorus, Arsenic, forms slag.



As then after a fixed interval formed steel is taken out to check the proper amount of carbon.



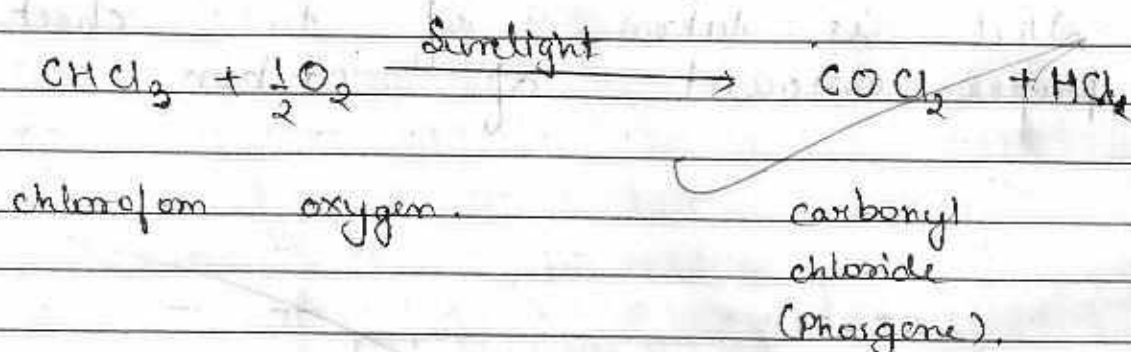
Furnace for manufacturing of steel.



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Answer of Ques no-14.

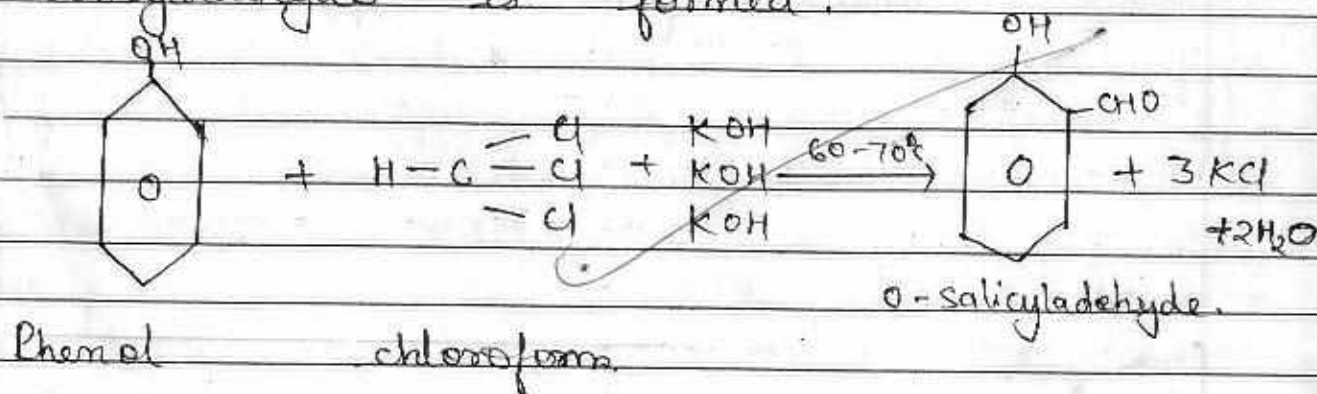
(i) Effect of air and sunlight on chloroform.



When chloroform react with oxygen in presence of sunlight then phosgene gas is formed which is highly poisonous.

(ii) Reimer - Tiemann Reaction

When chloroform React with Phenol in alkaline medium at 60-70°C then o-salicylaldehyde is formed.





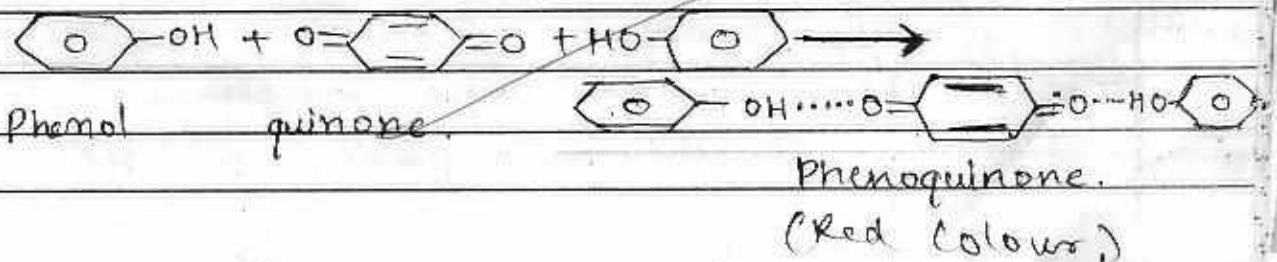
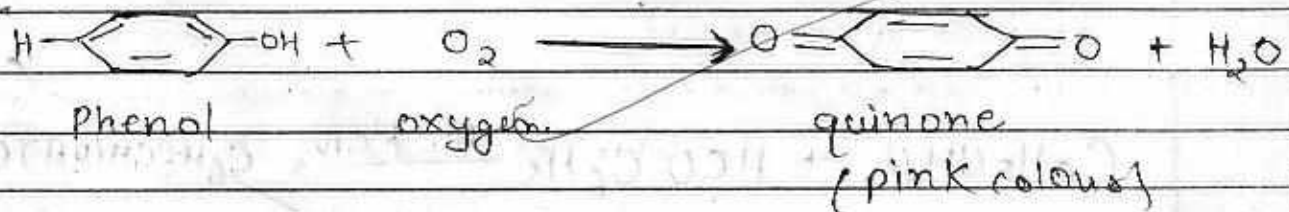
Answer of Ques no-16

(i) Boiling points of alcohols are higher than ether.

In alcohol, OH group is present, in which Hydrogen atom is connected with more electronegative element, Oxygen atom. So, tendency to form hydrogen bond is in hydrogen atom. Thus, In alcohol,

H-bond is present, while in ether, there is no H-bonding. So boiling point of Alcohol is higher than ether.

(ii) Pure phenol is a colourless solid but it converted into pink after some time by placing open in the air. This is because of oxidation.

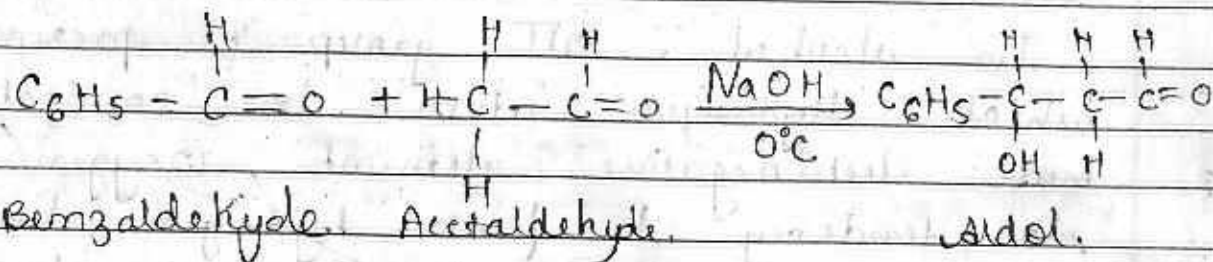


प्रश्न क्र.

Answer of Ques no-17.

Compounds from benzaldehyde.

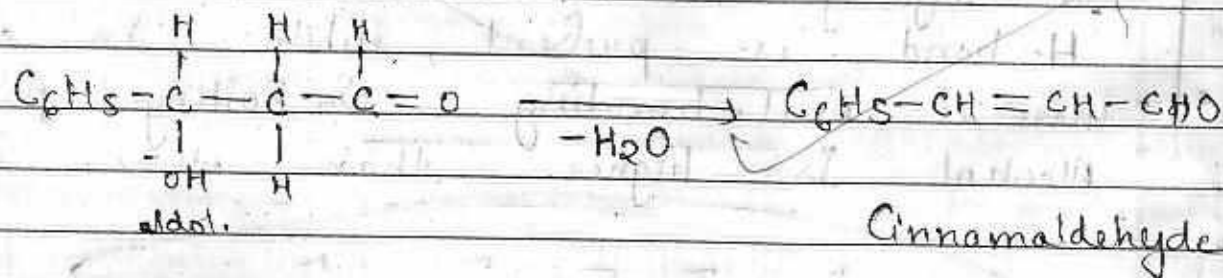
ii) Cinnamaldehyde



Benzaldehyde

Acetaldehyde

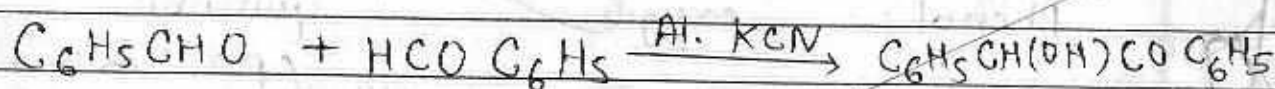
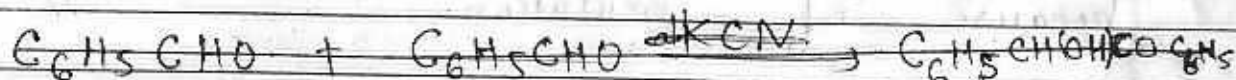
Aldol.



alcohol.

Cinnamaldehyde

Q11. Benzoin.



Benzaldehyde

Benzaldehyde

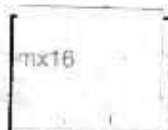
Benzoin

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पृष्ठ 17 के अंक

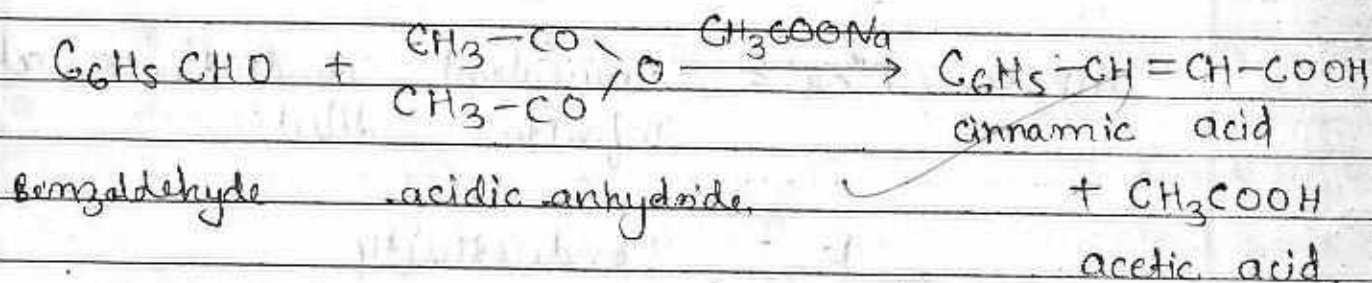
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क्र. (iii) Cinnamic acid.



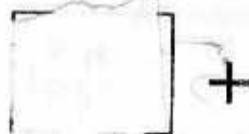
(iv) Benzoyl chloride.



Answer of Ques no-18.

ii) Equivalent Conductance.

Equivalent Conductance is defined as the conductance due to total number of ion produced after the addition of 1 gram equivalent of solute electrolyte in solution.



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$$\kappa_{eq} = k \times V$$

where κ_{eq} = equivalent conductance at infinite dilution.

k = Conductivity

V = Volume.

$$\kappa_{eq} = \frac{k \times 1000}{C}$$

where C can be represented by Normality.

$$\kappa_{eq} = \frac{k \times 1000}{N}$$

$$\text{Unit} = \text{ohm}^{-1} \text{ cm}^2 \text{ gm eq}^{-1}$$

(ii) Molar Conductivity.

"Molar conductivity of solution is defined as the conductance due to total number of ion produced due to addition of one gram mole of electrolyte in solution."

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पृष्ठ 19 के अंक

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$$\Delta_m^\infty = K \times V$$

where

Δ_m^∞ = molar conductance at infinite dilution.

K = Conductivity.

V = Volume.

$$\Delta_m^\infty = K \times 1000$$

(where C can be represented in M).

$$\Delta_m^\infty = \frac{K \times 1000}{M}$$

$$\begin{aligned} \text{unit} &= \text{ohm}^{-1} \text{cm}^{-1} \text{mol}^{-1} \text{cm}^3 \\ &= \text{ohm}^{-1} \text{cm}^2 \text{mol}^{-1} \end{aligned}$$

Answer of Ques no - 19.

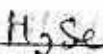
hydrides of Oxygen family.



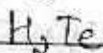
water



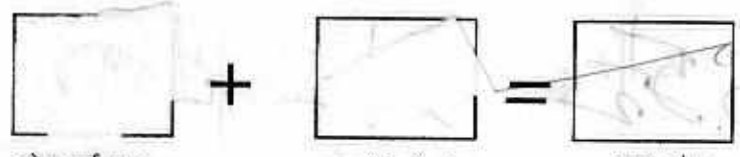
Hydrogen sulphide



Hydrogen selenide



Hydrogen telluride.



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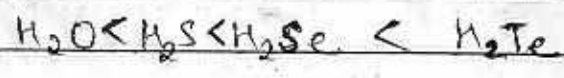
पृष्ठ 20 के अंक

कुल अंक



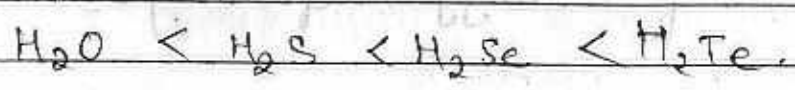
प्रश्न क्र.

(a) Reducing property - Reducing property of hydrides of oxygen family increases with increase in atomic number of central atom. this is because length of M-H bond increase so, they have greater tendency to release hydrogen atom.

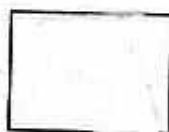


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(b) Acidic Property - Acidic property of hydrides of oxygen family increases with increase in atomic number of central atom. this is due to increase in length of M-H bond the tendency to release hydrogen in the form of H^+ ion increases.



(c) Thermal stability - Thermal stability of Hydrides of oxygen family decreases with increase in atomic number of central atom. this is due to increase in size and volume of central atoms.



then with the increase in temperature bonds break easily which have more length.



- (ii) Oxygen exhibits oxidation states -2 and $+2$ while other elements of this group exhibits oxidation states of $+2$, $+4$, and $+6$. This is because the last electron in oxygen atom enters in second shell in which d orbital is absent so in this excited state does not occur while in other elements, d -orbital is present in outer most shell that why excited states occur and they shows $+2$, $+4$, $+6$ oxidation states while oxygen not.

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प्रश्न क्र.

Answer of Quesno-20.

(i) Antifertility drug

These drugs are given to the female to prevent pregnancy and to avoid reproductive ability. These are the mixture of steroid hormones, like progesterone, estrogen they control menstrual cycle and ovulation in female.

eg. - Enovid E.
- Menstamol,
- Norethindrone.

(ii) Antacids

These drugs or chemical compounds are used to decrease the acidity in stomach. In our stomach HCl is secreted from gastric gland. It sometimes causes acidity. Some bicarbonates are used to decrease the acidic effect but not its actual cause, which is histamine. Thus some chemical compounds are used against acidity.



eg :- Remitidine
Omeprazole, etc.

(iii) Hypnotics

Hypnotics are the drugs used to decrease anxiety, tension, depression, and these drugs also induce sleep, and unconsciousness, these are used to generate positivity in minds.

e.g. - barbituric acid and its derivative, Seconal, Veronal, luminal.

(iv) Non-Hypnotics

These drugs are used to decrease tension and depression, but they do not induce sleep, and these generate positive thing thinking in mind.

eg: Diazepam, equanil, Vallium

These are Psycho-therapeutic drugs, which directly affect the central nervous system.



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प्रश्न क्र.

(M) Antibiotics. - Anti -
[Anti - against] and [bios - life].

Antibiotics are the substance which are synthesized from micro-organism and used against the other microorganism which causes diseases. They control growth and multiplication of pathogenic micro-organism. It should be used regularly but not frequently.

eg:- Penicillin - It was the first anti-biotic prepared from penicillium notatum which is mould.

It was firstly prepared by Alexander Flemming and he was awarded by nobel prize.

Other ex:- Streptomycin,
Tetracycline,
Amoxycillin
Amphillin.



माध्यमिक शिक्षा मण्डल, मध्यप्रदेश, भोपाल

4 पृष्ठीय

परीक्षार्थी द्वारा भरा जाये ↓

परीक्षा का विषय :

विषय कोड :

परीक्षा का माध्यम :

परीक्षा का दिनांक :

26 03 2018

Chemistry

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English

स्टीकर तौर के निशान ↓ से मिलाकर लगायें

परीक्षा का नाम एवं परीक्षा केन्द्र क्रमांक की मुद्रा

हायर सेकेंडरी सर्टिफिकेट परीक्षा 2017

केन्द्र क्रमांक-782167

पर्यवेक्षक का नाम एवं हस्ताक्षर

Namta Hanikhele

केन्द्राध्यक्ष/सहायक केन्द्राध्यक्ष के हस्ताक्षर

मुख्य उत्तर पुस्तिका के अंतिम पृष्ठ क्रमांक..... तक कुल प्राप्तांक

☐ = ☒

Ques no - 03.

to calculate osmotic pressure.
weight of solute sucrose. = 68.4gm

and Volume of solution = 1000ml

temperature = 293 K
and Value of R.

$$\pi = CRT$$

$$\pi = \frac{n_B RT}{V}$$

$$\pi = \frac{W_B}{M_B} \times \frac{1000}{V_{\text{in ml}}} \times R \times T$$

का योग