



केवल मूल्यांकनकर्ता के उपयोग हेतु!

माध्यमिक शिक्षा मण्डल, मध्यप्रदेश, भोपाल

32 पृष्ठीय

केवल परीक्षक द्वारा भरा जावे। प्रश्न क्रमांक के सम्मुख प्राप्तियों की प्रविष्टि करे।

प्रश्न क्रमांक	पृष्ठ क्रमांक	में	प्रश्न क्रमांक	पृष्ठ क्रमांक	प्राप्तियाँ (अंकों में)
1			17		
2			18		
3			19		
4			20		
5			21		
6			22		
7			23		
8			24		
9			25		
10			26		
11			27		
12			28		
13					
14					
15					
16					

परिष्कार उपमुख्य परीक्षक द्वारा भरा जावे ↓

परिष्कार एवं उपमुख्य परीक्षक द्वारा भरा जावे

प्रमाणित किया जाता है कि अन्दर के पृष्ठों के अनुरूप मुख्य पृष्ठ पर अंकों की प्रविष्टि एवं अंकों का योग सही है।

निर्धारित मुद्रा : नाम, पदनाम, मोबाईल नम्बर, परीक्षक क्रमांक एवं पदांकित संस्था के नाम की प्रविष्टि करे।

उप मुख्य परीक्षक	परिष्कार एवं निर्धारित मुद्रा	परीक्षक के हस्ताक्षर एवं मुद्रा
	Sahu (U.M.T.) Govt. Ex. HSS Shahpura Mch. No. 9424712624 Reg. No. 10574	O. P. Jhariya (U.M.T.) Govt. Model HSS Mehadwani Reg. No. 010755 Mch. No. 9424704161



प्रश्न क्र.

Question: 01

Answer

Ans 1) Ionisation isomerism

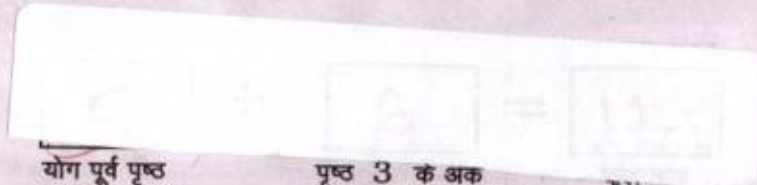
Ans 2) 8 minutes

B Ans 3) Maltase

S Ans 4) Basic

E Ans 5) 0.5 M

Ans 6)  $\text{cm}^{-1}$



प्रश्न क्र.

Question: 02

Answer

Ans 1) more ~~Band~~

Ans 2) Henry

Ans 3) 96500

Ans 4) Hexadentate

Ans 5) Picric acid

Ans 6)  $NH_3$





प्रश्न क्र.

Question: 03

Answer:

Ans 1) True ✓

Ans 2) True ✓

B Ans 3) False ✓

S Ans 4) False ✓

E Ans 5) True ✓

Ans 6) False ✓



प्रश्न क्र.

Question : 04

Answer

'A'

Answer

(i) Protein

Keratin

B

(ii) Vitamin 'D'

Rickets

S

E

(iii) Diazonium salts

 $C_6H_5N_2Cl$ 

(iv) Hinsberg's reagent

 $C_6H_5SO_2Cl$ (v) Vitamin  $B_{12}$ 

Cobalt



प्रश्न क्र.

Question: 05

Answer

Ans 1) Formalin is 40% aqueous solution of formaldehyde

Ans 2) Number of moles of solute dissolve in 1000 gm of solvent is called Molality of solution

B  
S  
E

$$M = \frac{\text{No. of moles of solute} \times 1000}{\text{Mass of solvent (in gm)}}$$

Ans 3)  $\text{ohm}^{-1} \text{cm}^2 \text{gmeq}^{-1}$  Prans

Ans 4)  $(n-2)f^{1-14} (n-1)d^{0-10} ns^2$

Ans 5) ultramer

7



प्रश्न क्र.

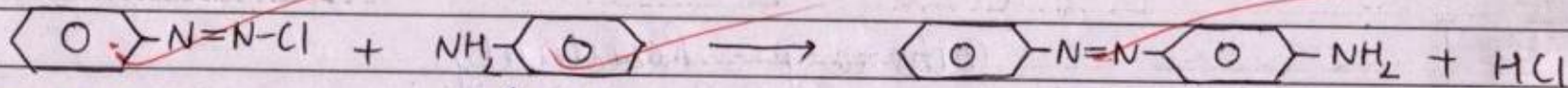
Question: 06

Answer: [OR]

Coupling Reaction:

When diazonium salt react with aniline to form yellow coloured dye called p-amino azo benzene. This is coupling reaction.

B  
S  
F



Benzene  
diazonium  
chloride

Aniline

p-amino azo  
benzene  
(Yellow dye)

Hydro-  
chloric  
acid



प्रश्न क्र.

Question: 07

Answer

Resistivity:

It is defined as resistance of conductor of length 1cm & area of cross section 1cm<sup>2</sup> is called resistivity. It is represented by 'ρ'. Its unit is "ohm cm"

$$\rho = \frac{Ra}{l}$$

where ρ = Resistivity

R = Resistance

a = area of cross section

l = length of conductor

B  
S  
E





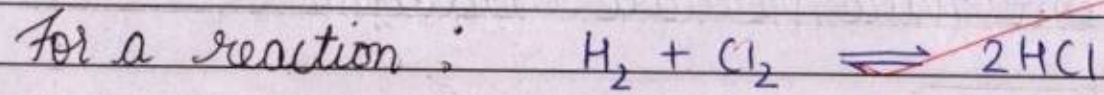
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Question: 08  
Answer [OR]

Molecularity:

Total number of reactant participate in the reaction is called molecularity of that reaction. Molecularity is always an integer. It can't be zero or fractional value

B  
S  
E



Here 2 molecules are participating in the reaction hence its molecularity is 2 & it is ~~bi~~ bimolecular react<sup>n</sup>

Question: 09  
Answer

Transition metals show changed (variable) oxidation states due to following reasons:

P.T.O.



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- 1) Their general electronic configuration is  $(n-1)d^{0-10} ns^2$ , hence electrons of  $d$  as well as  $s$  subshell participate in bond formation.
- 2) The energy difference between  $ns^2$  &  $(n-1)d$  subshell is negligible hence it can lose electrons from both subshell. Therefore transition element have variable oxidation state.

B  
S  
E

Question: 10

Answer

Ans 1)  $K_2 [Hg(I)_4] \rightarrow$  Potassium tetraiodido mercurate (II)

Ans 2)  $[Cr(H_2O)_6] Cl_3 \rightarrow$  Hexa aqua chromium (III) chloride



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Question: 11  
Answer [OR]

Ionisation Isomerism:

Compound having similar molecular & structural formula but they give different ion on hydrolysis is called ionisation isomer. This is ionisation isomerism

B  
S  
E

Example:  $[Co(NH_3)_5Cl]SO_4$  → <sup>Pentaamine</sup> ~~Tetraammine~~ chloride cobalt (III) sulphate

$[Co(NH_3)_5(SO_4)]Cl$  → <sup>Pentaamine</sup> ~~Tetraammine~~ sulphate cobalt (III) chloride

Question: 12  
Answer

Uses of DDT:

- It is used as an pesticides
- It is used for treatment of malaria by killing mosquitoes.



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Question: 13

Answerd-block elements:

The elements in which the last electron enters in d subshell is called d-block elements. Their innermost two shells are incomplete. They are also called transition element.

In modern periodic table elements from group 3<sup>rd</sup> to group 12<sup>th</sup> is called d-block elements.

Characteristics:

- 1) Transition elements form coloured ion.
- 2) Transition elements show variable oxidation state.
- 3) Transition elements are used in making alloy.
- 4) They also act like a catalyst.

B  
S  
E



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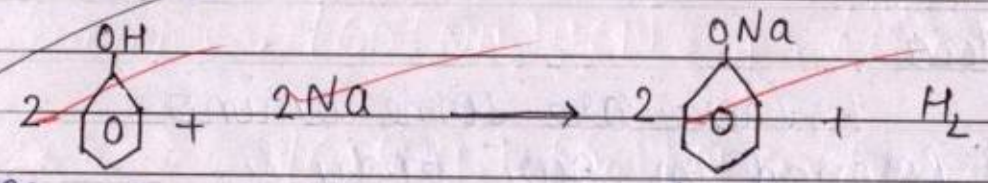
Question: 14

Answer

Reaction of phenol with sodium:

This reaction shows the acidic nature of phenol. When phenol reacts with sodium then it forms sodium phenoxide & H<sub>2</sub> is removed.

B  
S  
E



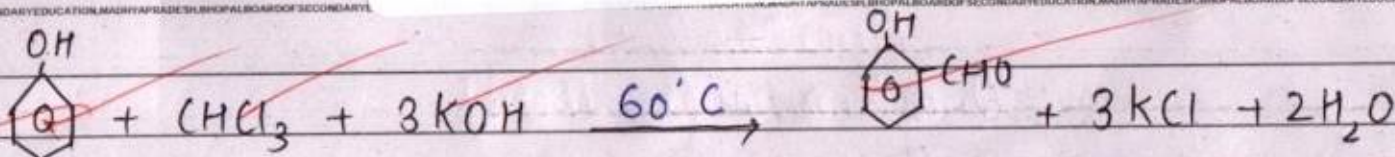
Phenol sodium

Sodium  
Phenoxide

Reimer-Tiemann Reaction:

When phenol reacts with chloroform & potassium hydroxide at 60°C to form salicylic aldehyde. This is Reimer-Tiemann Reaction.

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Phenol

Chloro-  
formPotassium  
hydroxideSalicylic  
aldehydePotassium  
chloride

Question: 15

Answer [OR]B  
S  
EEssential Amino Acid:

There are some amino-acid that are not formed in our body & is obtained from our diet is called essential amino acid.

Ex: - 1) Phenylalanine  
2) Methionine

Non Essential Amino Acid:

There are some amino-acid that are formed in our body & there is no need for taking these in our diet is called non-essential amino acid.



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example :- 1) Tyrosine  
2) glutamic acid.

Question: 16

Answer

We know that :

Rate constant for 1<sup>st</sup> order reaction :

$$k = \frac{2.303}{t} \times \log \frac{a}{(a-x)}$$

For 99% completion :

$$k = \frac{2.303}{t_{99}} \times \log \frac{100}{100-99}$$

$$k = \frac{2.303}{t_{99}} \times \log \frac{100}{1}$$

$$[\log 100 = 2]$$

$$k = \frac{2.303}{t_{99}} \times \log (10)^2$$

$$k = \frac{2.303}{t_{99}} \times 2 \times \log 10$$

$$[\log 10 = 1]$$

B  
S  
E



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$$K = \frac{2.303}{t_{99}} \times 2 \quad \text{--- (1)}$$

For 90% completion:

$$K = \frac{2.303}{t_{90}} \times \log \frac{100}{(100-90)}$$

$$K = \frac{2.303}{t_{90}} \times \log \frac{100}{10}$$

$$K = \frac{2.303}{t_{90}} \times \log 10$$

$$K = \frac{2.303}{t_{90}} \times 1 \quad | \log 10 = 1 | \quad \text{--- (2)}$$

By (1) & (2)

$$\frac{2.303}{t_{99}} \times 2 = \frac{2.303}{t_{90}}$$

$$t_{99} = 2 \times t_{90}$$

B  
S  
E





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Hence it is proved that for first order reaction, time required for 99% completion is twice the time required for 90% completion.

Question: 17  
Answer [OR]

B  
S  
E

Galvanic cell

Electrolytic cell

- 1) Here the ~~chemical energy~~ is converted into ~~electrical energy~~
- 2) ~~Two electrodes are dipped in two different container~~
- 3) ~~Salt bridge is required for better conductivity~~
- 4) Here ~~anode is negative & cathode is positive~~

- 1) Here, ~~electric energy~~ is converted into ~~chemical energy~~.
- 2) ~~Two electrodes are dipped in same container~~
- 3) ~~Salt bridge is not required~~
- 4) Here ~~anode is positive & cathode is negative~~



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5) ~~Electric energy is generated in this cell.~~

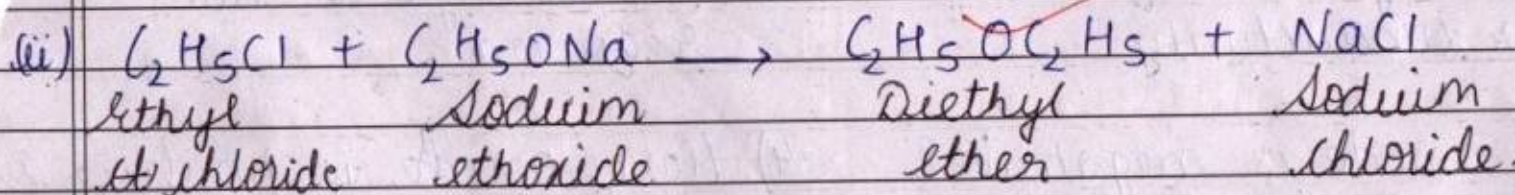
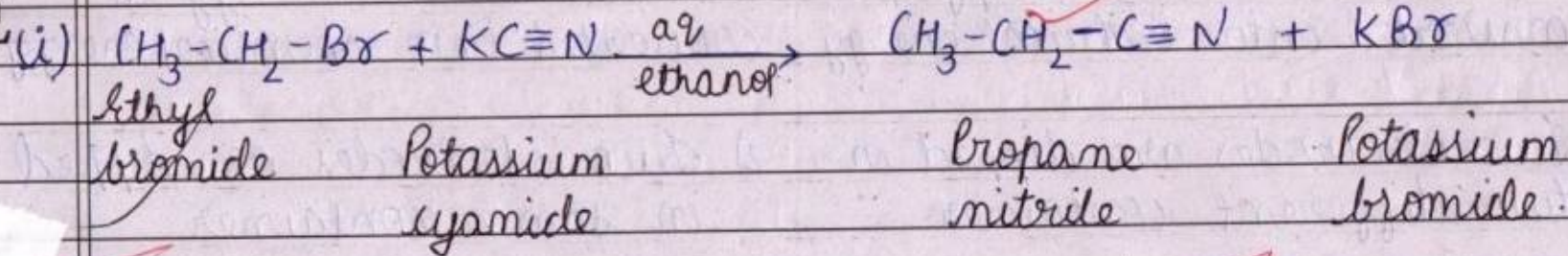
5) ~~Electric energy is given to this cell.~~

Question: 18

Answer: [OR]

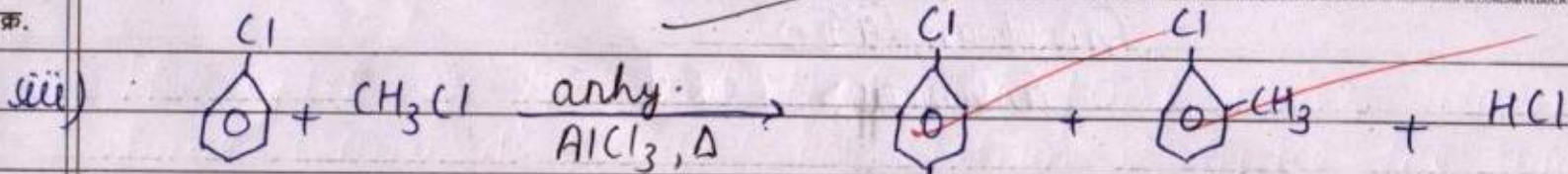
B  
S  
E

Complete the following reaction.





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Chloro Benzene

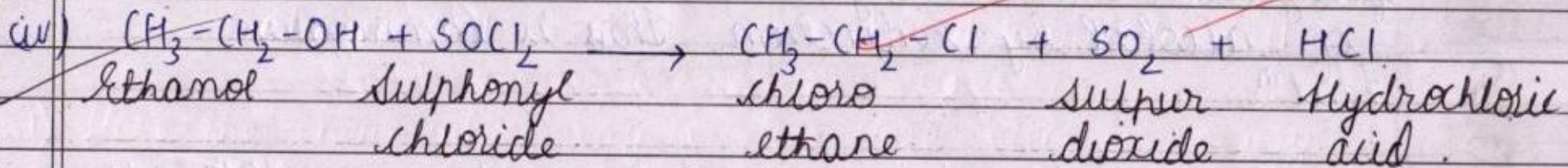
Methyl chloride

p-chloro Toluene

o-chloro Toluene

Hydrochloric acid

B  
S  
E





प्रश्न क्र.

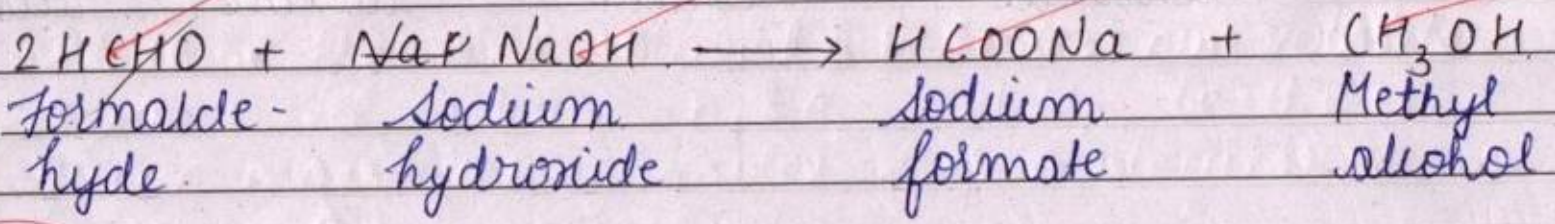
Question :- 19

Answer

(i) Cannizzaro Reaction :

When any aldehyde that do not have  $\alpha$ -hydrogen react with NaOH then it form one molecule of sodium salt of fatty acid and or by oxidation & one molecule of alcohol by reduction. This is Cannizzaro react<sup>n</sup>.

B  
S  
E







प्रश्न क्र.

Question: 20

Answer [OR]

Depression in freezing point:

When non volatile solute is added to pure solvent and prepare a solution then freezing point of the solution decreases. This is depression in freezing point.

Mathematical Expression for Molecular Mass:

Let A be the mass solvent & B be the non volatile solute. Let  $w_1$  &  $w_2$ ,  $n_1$  &  $n_2$ ,  $M_1$ ,  $M_2$  be the given mass, no. of moles of & molecular mass of A & B respectively.

From the experiment it is clear that depression in freezing point is a colligative property so it is directly proportional to molality of solution.



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$$\Delta T_f \propto m$$

$$\Delta T_f = K_f m$$

where  $K_f$  is molal cryoscopic constant.

$$\Delta T_f = K_f \times \frac{W_2 \times 1000}{M_2 \times W_1}$$

We know that

$$m = \frac{W_2 \times 1000}{M_2 \times W_1 (\text{in gm})}$$

$$M_2 = \frac{K_f \times W_2 \times 1000}{\Delta T_f \times W_1 (\text{in gm})}$$

B  
S  
E

If the value of all the quantities is known then molar mass of solute can be calculated.