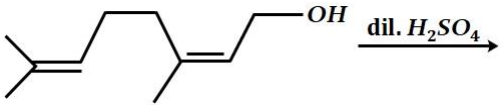
15. 


Major product in the following reaction is


*A* *B* *C*

There is not any resonance in $CH_3-OH$. Resonance is poor in $p$-Ethoxyphenol than phenol.

**17.** Which of the following are "green house gases"?

I. $CO_2$
II. $O_2$
III. $O_3$
IV. $CFC$
V. $H_2O$

A) I, II and IV
B) I, II, III and IV
C) I, III and IV
D) I, III, IV and V

Ans. D

Sol. $CO_2, O_3, H_2O$ vapours and $CFC's$ are green house gases.

**18.** Two liquids isohexane and 3-methylpentane has boiling point $60°C$ and $63°C$. They can be separated by

A) Simple distillation and isohexane comes out first.
B) Fractional distillation and isohexane comes out first.
C) Simple distillation and 3-Methylpantane comes out first.
D) Fractional distillation and 3-Methylpantane comes out first.

Ans. B

Sol. Liquid having lower boiling point comes out first in fractional distillation. Simple distillation can't be used as boiling point difference is very small.

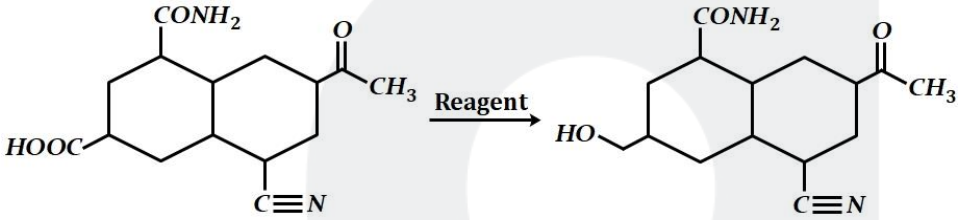
**19.** Which of the given statement is incorrect about glucose?

A) Glucose exists in two crystalline forms $\alpha$ and $\beta$.
B) Glucose gives schiff's test.
C) Penta acetate of glucose does not form oxime.
D) Glucose forms oxime with hydroxyl amine.

Ans. B

Sol. Open chain form of glucose is very small, hence does not gives Schiff's test.

**20.**




Reagent used for the given conversion is:

A) $H_2, Pd$
B) $B_2H_6$
C) $NaBH_4$
D) $LiAlH_4$

Ans. B

Sol. $B_2H_6$ is very selective and usually used to reduce acid to alcohol.

**21.** 0.3 $g$ $[ML_6]Cl_3$ of molar mass 267.46 $g/mol$ is reacted with 0.125 $M$ $AgNO_3(aq)$ solution, calculate volume of $AgNO_3$ required in $ml$.

Ans. 26.92

Sol. $[ML_6]Cl_3 + 3\,AgNO_3 \rightarrow 3\,AgCl$

$0.3\,g \quad v\,ml, 0.125\,M$

$$\frac{0.3}{267.46} \times 3 = 0.125 \times V \times 10^{-3}$$

Or, $V = \frac{0.3\times3\times1000}{267.46\times0.125}$

$= 26.92\,ml$

**22.** Given: $2H_2O \rightarrow O_2 + 4H^+ + 4e^- \quad E^0 = -1.23\,V$

Calculate electrode potential at $pH = 5$.

Ans. $-00.93$

Sol. $E = -1.23 - \frac{0.0591}{4}\log[H^+]^4$

$= -1.23 + 0.0591 \times pH = -1.23 + 0.0591 \times 5$

$= -1.23 + 0.2955 = -0.9345\,V = -0.93\,V$

**23.** Calculated the mass of $FeSO_4 \cdot 7H2_O$, which must be added in 100 $kg$ of wheat to get 10 $PPM$ of $Fe$.

Ans. 04.96

Sol. $10 = \frac{\text{Mass of } Fe(\text{in } g)}{100\times1000} \times 10^6$

Or, mass $Fe = 1\ g$

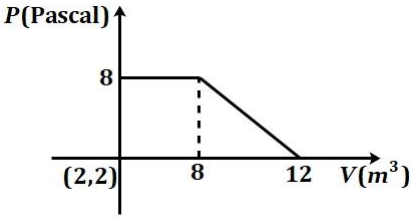
$FeSO_4 \cdot 7H_2O(M = 278)$

56 $g$ in 1 $mole$

$1g - \frac{1}{56} mole$

$\frac{1}{56} \times 278\ g = 4.96\ g$

**24.**




A gas undergoes expansion according to the following graph. Calculate work done by the gas.

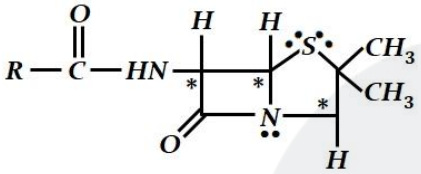
Ans. 48.00

Sol. $|W| = \frac{1}{2}(6 + 10) \times 6 = 48\ J$

**25.** Number of chiral centres in Pencillin is

Ans. 03.00

Sol.




Star marked atoms are chiral centers.