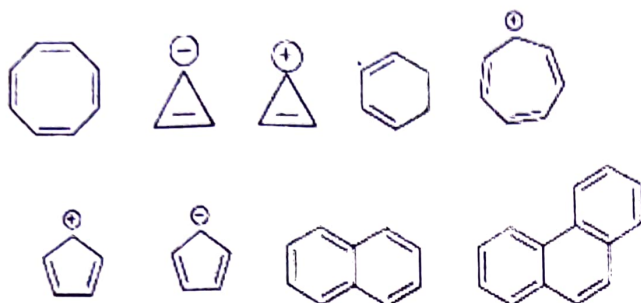


I. Answer all the questions by selecting the most suitable alternative.

(5×1=5M)

1) Among the following, the number of aromatic compounds are:



- a) 3 b) 6 c) 5 d) 2

2) When 2-butyne is treated with H_2 / Lindlar's catalyst, compound X is produced as the major product and when treated with H_2 / Na, $liqNH_3$ it produces Y as the major product. Which of the following statement is correct?

- a) Y will have higher dipole moment and higher boiling point than X
b) Y will have higher dipole moment and lower boiling point than X
c) X will have lower dipole moment and lower boiling point than Y
d) X will have higher dipole moment and higher boiling point than Y

3) A compound on ozonolysis yields ethanal and methanal as the major products. The compound can be:

1. Prop-1-ene b) Pent-1-ene c) But-1-ene d) Ethene

4) Given the electrode potentials of $K^+/K = -2.93V$, $Ag^+/Ag = 0.80V$,

$Mg^{2+}/Mg = -2.37V$, $Co^{+2}/Co^{+3} = 1.81V$; which of these metals is a strong reducing agent?

- a) Ag b) K c) Mg d) Co

5) The units of molar conductivity is -----

- a) Ω^{-1} b) $S\ m^{-1}\ mol^{-1}$ c) $m^2\ mol^{-1}$ d) $S\ m^2\ mol^{-1}$

II) Answer any TWO of the following questions

(2×5=10M)

1) Define Markovnikov and Anti-Markovnikov's rules. Explain and give mechanism of addition of HBr to 1-hexene in presence of benzoyl peroxide (5M)

2) a) Explain the following with example

(3M)

- i. Wurtz reaction ii. Kolbe's electrolysis iii. Sulphonation of Benzene

b. Calculate the standard Gibbs energy and equilibrium constant of the following cell reaction $2Fe^{3+} + 2I^- \rightarrow 2Fe^{2+} + I_2$ has $E^0_{cell} = 0.236V$ and at 298K. (2M)

3) a) What are galvanic cells? Explain the working of a galvanic cell with a neat sketch taking Daniel cell as example.

(2M)

b) What is Nernst equation? Write the Nernst equation and calculate the EMF of the cell consisting the following half cells

(3M)

$Al/Al^{3+}(0.001M)$, $Ni/Ni^{+2}(0.50M)$. Given that $E^0_{Ni^{2+}/Ni} = -0.25V$ $E^0_{Al^{3+}/Al} = -1.66V$ ($\log 8 \times 10^{-6} = -5.0969$)