CHEMISTRY

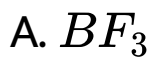# BOOKS - SUNSTAR CHEMISTRY (KANNADA ENGLISH)

K-CET-CHEMISTRY-2019

Question

1. Which of the following possess net dipole moment?

A. BF_3

B. SO_2

C. CO_2

D. $BeCl_2$

Answer: B

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2. The number of π-bonds and σ-bonds present in naphthalene are respectively

A. 5,19

B. 6,19

C. 5,20

D. 5,11

Answer: A

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3. The reaction in which $\Delta H > \Delta U$ is

A. $CaCO_{3(s)} \rightarrow CaO_{(s)} + CO_{2(g)}$

B. $N_{2(g)} + O_{2(g)} \rightarrow 2NO_{(g)}$

C.

$$CH_{4(g)} + 2O_{2(g)} \rightarrow CO_{2(g)} + 2H_2O_l$$

D. $N_{2(g)} - 3H_{2(g)} \rightarrow 2NH_{3(g)}$
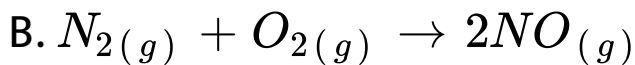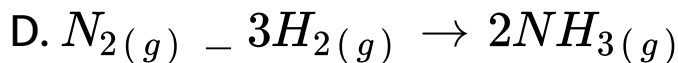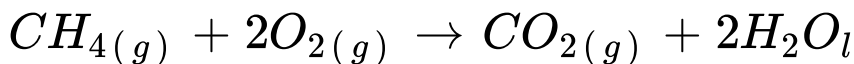
Answer: A

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4. The number of moles of electron required

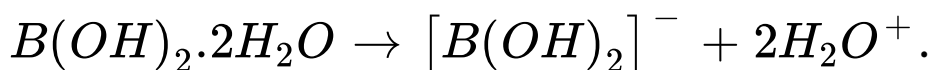to reduce 0.2 mole of $Cr_2O_7^{2-}$ to Cr^{3+}

A. 6

B. 1.2

C. 0.6

D. 12

Answer: B

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5. In the reaction

$$B(OH)_2 . 2H_2O \rightarrow [B(OH)_2]^- + 2H_2O^+.$$

[B(OH)_(2)]^(-) is

A. Lewis base

B. Protonic acid

C. Lewis acid

D. Bronsted acid

Answer: C

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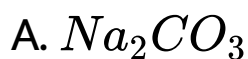
6. Match the folllwing acids with their pKa

values:

	Acid		pKa
a.	Phenol	i.	16
b.	p-Nitrophenol	ii.	0.78
c.	Ethanol	iii.	10
d.	Picric acid	iv.	7.1

	a	b	c	d
(A)	iii	i	ii	iv
(B)	iii	iv	i	ii
(C)	iv	ii	iii	i
(D)	iii	i	iv	ii

7. Which of the following can be used to test the acidic nature of ethanol?
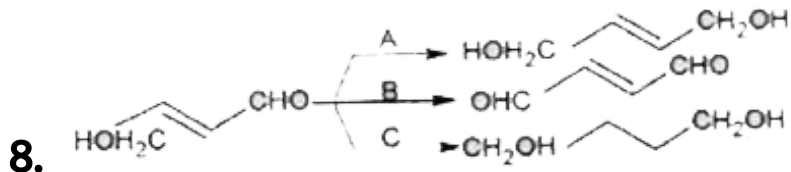
A. Na_2CO_3

B. Blue litmus solution

C. Na metal

D. $NaHCO_3$

Answer: C

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8.

The reagents A,B and C respectively are

A. $NaBH_4$,alk.$KMNO_4$. H_2/pd

B. $H_2/Pd, P\mathbb{C}, NaBH_4$

C. $H_2/Pd, alk.\ KMnO_4, NaBH_4$

D. $NaBH_4, P\mathbb{C}, H_2/Pd$

Answer: D

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9. Propanoic acd undergoes HVZ reaction to give chloropopanoic acid.The product obtained is

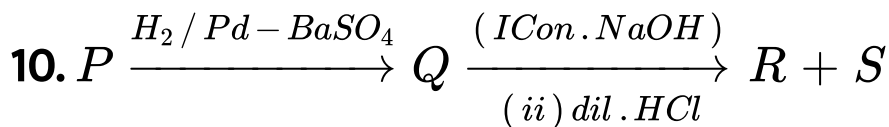A. as stronger as propanoic acid

B. stronger acid than propanoic acid

C. stronger than dichloropropanoic acid

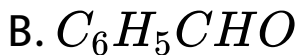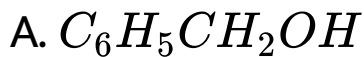D. weaker acid than propanoic acid

Answer: B

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10. $P \xrightarrow{H_2/Pd-BaSO_4} Q \xrightarrow[(ii)\,dil.\,HCl]{(ICon.\,NaOH)} R + S$

R and S form benzyl benzoate when treated with each other .Hence P is

A. $C_6H_5CH_2OH$
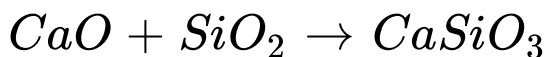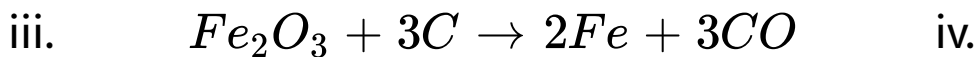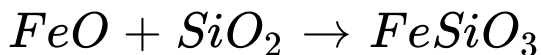
B. C_6H_5CHO

C. C_6H_5COOH

D. C_6H_5COCl

Answer: D

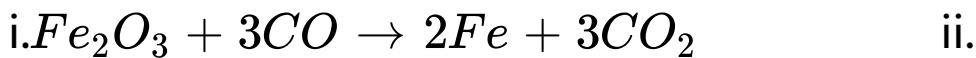▶ **Watch Video Solution**

11. The main reactions occurring in blast furnace during extraction of iron from haematite are

i. $Fe_2O_3 + 3CO \rightarrow 2Fe + 3CO_2$ ii.

$FeO + SiO_2 \rightarrow FeSiO_3$

iii. $Fe_2O_3 + 3C \rightarrow 2Fe + 3CO$ iv.

$CaO + SiO_2 \rightarrow CaSiO_3$
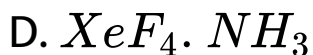
A. iii and iv

B. I and ii

C. I and iv

D. ii and iii

Answer: C

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12. Which of the following pair contains 2 long pair of electrons on the central atom?

A. H_2O, NF_3

B. I_3, H_2O

C. SO_4^{2-} . H_2S

D. XeF_4. NH_3
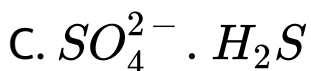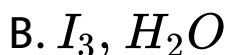
Answer: B

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13. Which of the following statement is correct?

A. CI_2, is a stronger oxidizing agent than F_2

B. Cl_2 oxidises H_2O to O_2 , but F_2 does not.

C. Fluoride is a good oxidising agent.

D. F_2 oxidises H_2O to O_2 but Cl_2 does not

Answer: D

14. 0.1 mole of XeF_6 is treated with 1.8 g of water.The product obtained is

A. XeO_2F_2

B. XeO_3

C. $Xe + XeO_3$

D. $XeOF_4$

Answer: D

15. In the reaction of gold with aquaregia, oxidation state of Nitrogen changes from

    A. $+6$ to $+4$

    B. $+4$ to $+2$

    C. $+3$ to $+1$

    D. $+5$ to $+2$

Answer: D

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16. The vitamin that helps to clotting of blood is

A. C

B. A

C. K

D. B_2

Answer: C

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17. The polymer containing five methylene groups in its repeating unit is

A. Nylor 6

B. Nylon 6.6

C. Bakelite

D. Dacron

Answer: A

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18. Cis-1,4- polysoprene is called

A. Neoprene

B. Buna-N

C. Natural rubber

D. Buna-S

Answer: C

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19. Which cleansing agent gets precipitated in hard water?

A. Sodium stearate

B. Sodium lauryl sulphate

C. Sodium dodecyl benzene sulphonate

D. Cetyl trimethyl ammonium bromide

Answer: A

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20. Anti-histamine among the following is

A. Morphine

B. Bromopheneramine

C. Chloroxy lenol

D. Amoxycillin

Answer: B

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21. The elements in which electrons are progressively filled in 4f orbital are called

A. Transition elements

B. Antinoids

C. Halogens

D. Lanthanoids

Answer: D

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22. Incorrect statement with reference to Ce

(Z=58)

A. Ce in +3 oxidation state is more stable

than in +4

B. Ce^4 is a reducing agent.

C. Ce shows common oxidation states of +3

and +4

D. Atomic size of Ce is more than that of Lu.

Answer: B

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23. A mixture of NaCl and $K_2Cr_2O_7$ is heated with conc. H_2SO_4 ,deep red vapours and formed .Which of the following statements is false?

A. The vapours contain CrO_2Cl_2 only

B. The vapours give a yellow solution with NaOH

C. The vaopurs when passed into lead acetate in acetic give a yellow

precipitate.

D. The vapours contain CrO_2Cl_2 and Cl_2

Answer: D

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24. Which of the following statement is wrong?

A. Mn^3 and CO^3 are oxidizing agents is aqueous solution

B. In highest oxidation states.the transition

metals show acidic

C. All elements of 3d series exhibit variable

oxidation states.

D. Metals in highest oxidation states are

more stable in oxide then in fluorides

Answer: C

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25. Which among the following is the strongest ligard?

A. NH_3

B. CN

C. en

D. CO

Answer: D

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26. Which of the following is a network crystalline solid?

A. AlN

B. I_2

C. Ice

D. NaCl

Answer: A

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27. The number of atoms in 2.4 g of body centred cubic crystal with length 200 pm is (density=10 g cm^{-3} ,NA =6 $\times$ 10^{22} atoms/mol)

A. 6×10^{20}

B. 6×10^{22}

C. 6×10^{19}

D. 6×10^{23}

Answer: B

28. I mol of NaCl is doped with 10^{-5} mole of $SrCl_2$ .The number of cationic vacancies in the crystal lattice will be

A. 6.022×10^{15}

B. 6.022×10^{18}

C. 12.044×10^{20}

D. 6.022×10^{23}

Answer: B

29. A non -volatile solute.'A' tetramerises in water to the extent of 80% .2.5 g of 'A' in 100 g of water .lower the freezing point by 0.3 $°C$ .The molar mass of Å in mol 4^{-1} is (K_TFor water =1.86 K kg mol^{-1})

A. 221

B. 62

C. 354

D. 155

Answer: B

30. Solution 'A' contains acetone dissolved in chloroform and solution B' contains acetone dissolved in carbon disulphide. The type of deviations from Raoult's law shown by solutions A and B, respectively are

A. positive and negative

B. positive and positive

C. negative and positive

D. negative and negative

Answer: C

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31. The mass of AgCl precipitated when a solution containing 11.70 g of NaCl is added to a solution containing 3.4g of $AgNO_3$, is [Atomie mass of Ag -108, Atomic mass of Na - 23]

A. 1.17 g

B. 5.74 g

C. 6.8 g

D. 2.87 g

Answer: D

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32. Two particle A and B are in motion. If the wavelength associated with 'A' is 33.33 nm, the wavelength associated with 'B' whose momentum is $1/3^{rd}$ of 'A' is

A. $2.5 \times 10^{-5}m$

B. $1.0 \times 10^{-8}m$

C. $1.0 \times 10^{-7}m$

D. $1.25 \times 10^{-7}m$

Answer: C

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33. The first ionization enthalpy of the following elements are in the order:

A. $P < Si < N < C$

B. $C < N < Si < P$

C. $Si < P < C < N$

D. $P < Si < C < N$

Answer: C

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34. Solubility of AgCl is least in

A. Pure water

B. 0.1 M NaCl

C. 0.1 M $AlCl_3$

D. 0.1 M $BaCl_2$

Answer: C

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35. Which of the following equations does NOT represent Charles 's law for a given mass of gas at constant pressure?

A. log V=log K+log T

B. $\dfrac{V}{T} = K$

C. $\dfrac{d(\ln V)}{df} = \dfrac{1}{T}$

D. log K=log V+log T

Answer: D

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36. Which of the most suitable reagent for the following conversion?

$$CH_3 - CH = CH - CH_2 - \overset{\overset{O}{\parallel}}{C} - CH_3 \rightarrow CH_3 - CH = CH - CH_2 - \overset{\overset{O}{\parallel}}{C} - OH$$
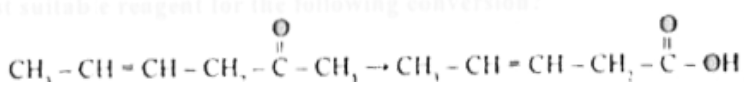
A. l_2 and NaOH solution

B. Tollen's reagent

C. Sn and NaOH solution

D. Benzoyl peroxide

Answer: A

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37. Which of the following is least soluble in water at 298 K?

A. $(CH_3)_3N$

B. CH_3NH_2

C. $C_6H_6NH_2$

D. $(CH_3)_2NH$
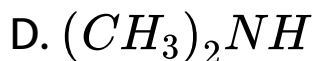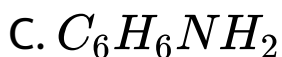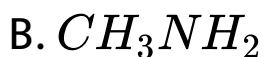
Answer: A

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38. If Aniline is treated with 1:1 mixture of con HNO_3 and con. H_2SO_4,p-nitroaniline and mnitroaniline are formed nearly in equal amounts.This is due to

    A. protonation of $-NH_2$ which causes deactivation of benzene ring

    B. m-directing property of $-NH_2$ group

    C. isomerisation of some p-nitoaniline into m-nitroniline

D. m and p directing property of $-NH_2$

   group

Answer: A

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39. In nucleic acids, the nucleotides are joined

together by

   A. Phosphodiester linkage

   B. Pospheoster linkage

C. Sulphodiester linkage

D. Phosphodisulphide linkage

Answer: A

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40. Which of the following is generally water insoluble?

A. Vitamin-C

B. Fibrous protein

C. Glycine

D. Amylose

Answer: B

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41. Relative lowering of vapour pressure of al dilute solution of gluscose dissolved in 1kg of water is 0.002.The molality of the solution is

A. 0.222

B. 0.004

C. 0.021

D. 0.111

Answer: D

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42. One litre solution of $MgCl_2$ is electrolyzed completely by passing a current of 1A for 16 min 5 sec.The ogiginal concentration of $MgCl_2$ solution was(Atomic mass of Mg=24)

A. $5 \times 10^{-2} M$

B. $5 \times 10^{-3} M$

C. $1.0 \times 10^{-2} M$

D. $0.5 \times 10^{-3} M$

Answer: B

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43. An aqueous solution of $CuSO_4$ is subjected to electrolysis using inert electrodes.The pH of the solution will

A. remains uncharged

B. increase

C. increase or decrease depending on the

    strength of the current

D. decrease

Answer: D

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44. Give $E^0_{mn^{+7}|Ma^{+2}}$ =1.5 and $E^0_{Mn+4|Ma^{+2}}$

,then $E_{mn^{+7}|Mn^{+4}}$ is

   A. 0.1 V

   B. 0.3 V

   C. 2.1V

   D. 1.7V

Answer: D

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45. The plot of $t\dfrac{1}{2}$ V/s [R]0 for a reaction is a straight-line parallel to x-axis.The unit for the rate constant of this reaction is

A. mol $L^{-1}s^{-1}$

B. mol $L^{-1}S$

C. S^{-1}

D. $Lmol^{-1}S^{1-}$

Answer: A

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46. The metal nitrate that liberates NO_2 on heating

A. $LiNO_3$

B. $NaNO_3$

C. $RbNO_3$

D. KNO_3
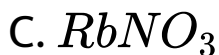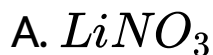
Answer: A

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47. Which of the following is NOT true regarding the usage of hydrogen as a fuel?

A. The combustible energy of hydrogen can be directly converted to electrical energy in a fuel cell

B. High calorific value

C. Hydrogen gas can be easily liquefied and stored.

D. Combusion product is ecofriendly.

Answer: C

48. Resonance effect is not observed in

A. $CH_2 = CH - C = N$

B. $CH_2 = CH - CH = CH_2$

C. $CH_2 = CH - CH_2 - NH_2$

D. $CH_2 = CH - Cl$
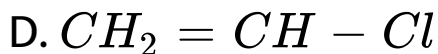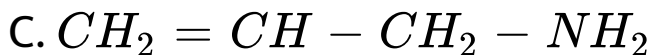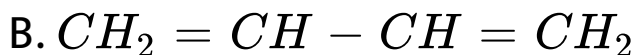
Answer: C

49. 2-butyne is reduced to trans-but-2-ene using

A. Na in liq. NH_3

B. $H_2 \mid Ni$

C. Zn in dil .HCl

D. $H_2 \mid pd - C$

Answer: A

50. Eutrophication causes

    A. reduction in water pollution

    B. increase of nutrients in water

    C. decreases BOD

    D. reduction in dissolved oxygen

Answer: D

51. Addition of excess of $AgNO_3$ to an aqueous solution oof 1 mole of $PdCl_4.4NH_3$ gives 2 moles of AgCl.The conductivity of this solution corresponds to

A. 1:3 electrolyte

B. 1:1 electrolyte

C. 1:4 electrolyte

D. 1:2 electrolyte

Answer: D

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52. The formula of pentaaquanitratochromium(III)nitrate is

A. $\left[Cr(H_2O)_6(NO_2)_2\right]$

B. $\left[Cr(H_2O)_6(NO_3)_3\right]$

C. $\left[Cr(H_2O)_5NO_2\right]NO_3$

D. $\left[Cr(H_2O)_5NO_3\right](NO_3)_2$
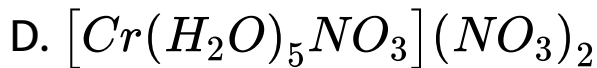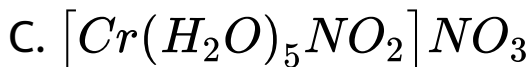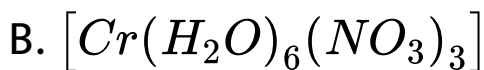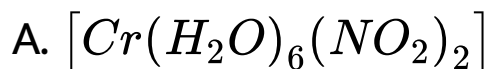
Answer: D

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53. Which of the following halide undergoes hydrolysis on warming with water /aqueous NaOH?

A.

B.

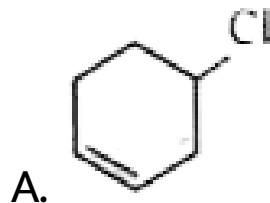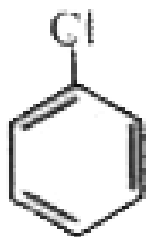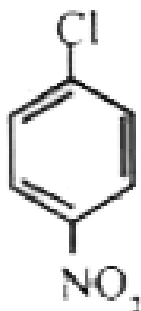
C.

D.
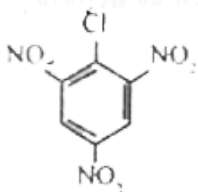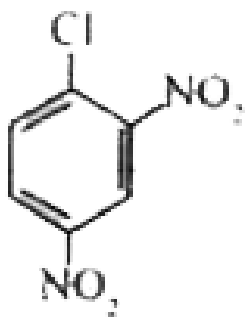
Answer: C

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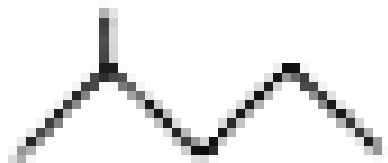
54. The compound having longest C-Cl bond is
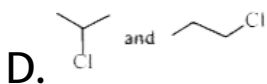

A.

B.

C. $CH_2 = CH - Cl$
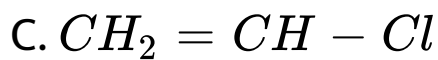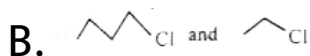
D.

Answer: A

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55. The alkyl halides required to prepare

by wurtz reaction are

A. and

B. Cl and Cl

C. and Cl

D. and Cl
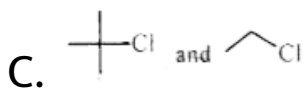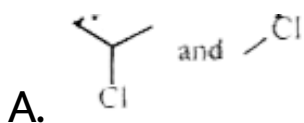
Answer: D

56. Which is a wrong statement?

A. $e^{-Ea/Rt}$ gives the fraction of reactant molecules that are activated at the given temp

B. Rate constant K=Arrhenius constant A:if Ea =0

C. Presence of catalyst will not alter the value of Ea

D. In K vas l/T plot is a straight line

Answer: C

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57. 1L to 2M CH_2COOH is mixed with 1L to 3M C_2H_5OH to form an ester.The rate of the reaction with respect to the initial rate when each solution is diluted with an equal volume of water will be

A. 2 times

B. 0.25 times

C. 4times

D. 0.5 times

Answer: B

58. Which of the following is an example of homogeneous catalysis ?

A. Oxidation of SO_2 in contact process

B. Oxidation of NH_3 is Ostwald's process

C. Manufacture of NH_3 by Haber's process

D. Oxidation of SO_2 in lead chamber process

Answer: D

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59. Critical micelle concentration for a soap solution is 1.5×10^{-4} mol L^{-1} .Micelle

formation is possible only when the concentration of soap solution in mol L^{-1} is

A. 4.6×10^{-5}

B. 2.0×10^{-3}

C. 1.1×10^{-4}

D. 7.5×10^{-5}

Answer: B

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60. Oxidation state of copper is +1 in

    A. Cuprite

    B. Malachite

    C. Chalcopyrite

    D. Azurite

Answer: A

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