



CHEMISTRY

BOOKS - KCET PREVIOUS YEAR PAPERS

KARNATAKA CET 2007

Chemistry

1. The number of unidentate ligands in the complex ion is called

A. oxidation number

B. primary valency

C. coordination number

D. EAN

Answer: C



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2. $2SO_2(g) + O_2(g) \rightleftharpoons (V_2O_5)$ is an example of

A. neutralisation reaction

B. homogeneous catalysis

C. heterogeneous catalysis

D. irreversible reaction

Answer: C



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3. The amino acid which is not optically active is

A. lactic acid

B. serine

C. alanine

D. glycine

Answer: D



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4. For a stable molecule the value of bond order must be

A. zero

B. positive

C. negative

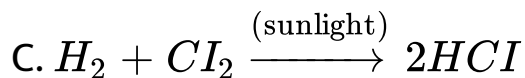
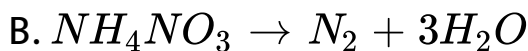
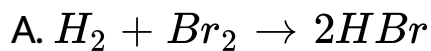
D. there is no relationship between stability and bond order.

Answer: B

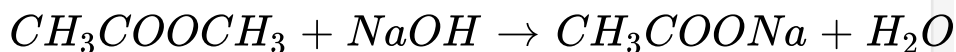


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5. Which one of the following is a second order reaction?



D.



Answer: D



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6. Denatured alcohol is

- A. ethanol + methanol
- B. rectified spirit + methanol + naphthalene
- C. undistilled ethanol
- D. rectified spirit

Answer: A



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7. During the formation of a chemical bond

- A. electron-electron repulsion becomes more than the nucleus-electron attraction
- B. energy of the system does not change
- C. energy increases
- D. energy decreases.

Answer: D



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8. One mole of oxygen at 273 K and one mole of sulphur dioxide at 546 K are taken in two separate containers, then

A. kinetic energy of both are equal

B. kinetic energy of $O_2 <$ kinetic energy of SO_2

C. kinetic energy of $O_2 >$ kinetic energy of SO_2

D. none of these.

Answer: B



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9. $+I$ effect is shown by

A. $-CH_3$

B. $-Br$

C. $-CI$

D. $-NO_2$

Answer: A



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10. Formation of coloured solution is possible when metal ion in the compound contain

A. lone pair of electrons

B. unpaired electrons

C. paired electrons

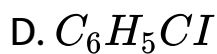
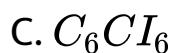
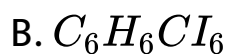
D. none of these.

Answer: B



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11. Benzene reacts with chlorine in sunlight to give a final product



Answer: B



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12. In the periodic table metals usually used as catalysts belong to

A. f-block

B. d-block

C. p-block

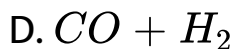
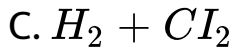
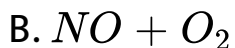
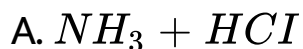
D. s-block

Answer: B



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13. Dalton's law of partial pressures is applicable to which one of the following systems?



Answer: D



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14. The general formula of a cycloalkane is



Answer: B



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15. In acetylene molecule, between the carbon atoms there are

- A. three pi bonds
- B. one sigma and two pi bonds
- C. two sigma and one pi bonds
- D. three sigma bonds

Answer: B



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16. Which of the following is an intensive property?

- A. Viscosity
- B. Surface tension

C. Temperature

D. All of these

Answer: D



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17. Hofmann's bromamide reaction is to convert

A. acid to alcohol

B. alcohol to acid

C. amide to amine

D. amine to amide.

Answer: C



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18. IUPAC name of $Na_3 [Co(NO_2)_6]$ is

A. sodium hexanitritocobaltate(II)

B. sodium hexanitritocobalt(III)

C. sodium hexanitrocobaltate(III)

D. sodium cobaltnitrite

Answer: C



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19. Thermodynamic standard conditions of temperature and pressure are

A. $0^{\circ}C$ and 101.3 kPa

B. 298 K and 1 atm

C. 273 K and 101.3 kPa

D. $0^{\circ}C$ and 1 atm

Answer: B



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20. How many chiral carbon atoms are present in 2,3,4-trichloropentane?

A. 4

B. 1

C. 2

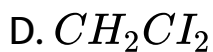
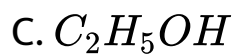
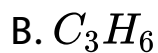
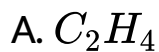
D. 3

Answer: C



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21. Which one of the following shows functional isomerism?

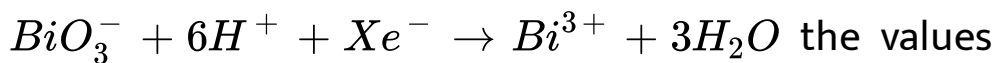


Answer: C



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22. In the ionic equation -



the values of x is

A. 6

B. 2

C. 4

D. 3

Answer: B



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23. Molarity of a given orthophosphoric acid solution is 3 M. Its normality is

A. 9 N

B. 0.3 N

C. 3 N

D. 1 N

Answer: A



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24. Acidified sodium fusion extract on addition of ferric chloride solution gives blood red colouration which confirms the presence of

A. S and Cl

B. N and S

C. N

D. S

Answer: B



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25. A body of mass 10 mg is moving with a velocity of 100ms^{-1} . The wavelength of de-Broglie wave associated with it would be ($h = 6.63 \times 10^{-34} \text{ Js}$)

A. $6.63 \times 10^{-35} \text{ m}$

B. $6.63 \times 10^{-34} \text{ m}$

C. $6.63 \times 10^{-31} \text{ m}$

D. $6.63 \times 10^{-37} \text{ m}$

Answer: C



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26. According to Bayer's strain theory which is highly stable?

- A. Cyclobutane
- B. Cyclopentane
- C. Cycloheptane
- D. Cyclohexane

Answer: C



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27. The number of antibonding electron pairs in O_2^{2-} molecular ion on the basis of molecular orbital theory is (Atomic number of O is 8)

A. 5

B. 4

C. 3

D. 2

Answer: B



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28. Hydroxyl ion concentration of 1 M HCl is

A. $1 \times 10^1 \text{ mol dm}^{-3}$

B. $1 \times 10^{-13} \text{ mol dm}^{-3}$

C. $1 \times 10^{-1} \text{ mol dm}^{-3}$

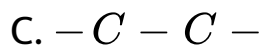
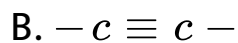
D. $1 \times 10^{-14} \text{ mol dm}^{-3}$

Answer: D



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29. Geometrical isomerism is shown by



D. none of these.

Answer: A



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30. The oxidation state of iron in $K_4[Fe(CN)_6]$ is

A. 1

B. 4

C. 3

D. 2

Answer: D



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31. During the extraction of gold the following

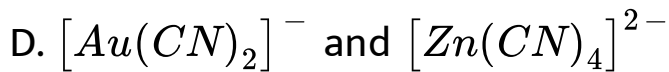
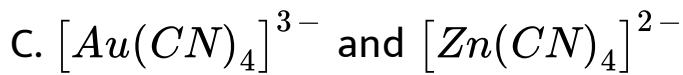
reactions take place. $Au + CN^- + H_2O \xrightarrow{O_2} [X]$

$[X] + Zn \rightarrow [Y] + Au$

X and Y are respectively.

A. $[Au(CN)_2]^-$ and $[Zn(CN)_6]^{4-}$

B. $[Au(CN)_4]^{2-}$ and $[Zn(CN)_4]^{2-}$



Answer: D



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32. The number of gram molecules of chlorine in 6.02×10^{25} hydrogen chloride molecules is

A. 10

B. 100

C. 50

D. 5

Answer: C



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33. Graphite is a soft solid lubricant extremely difficult to melt. The reason for this anomalous behaviour is that graphite

A. is an allotropic form of carbon

B. is a non-crystalline substance

C. has carbon atoms arranged in large plates of weak interplate bonds

D. has molecules of variable molecular masses like
polymers.

Answer: C



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34. Paracetamol is a/an

- A. analgesic
- B. antipyretic
- C. both (a) and (b)
- D. antimalarial

Answer: B



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35. Which one of the following has maximum number of atoms of oxygen?

A. 2 g of carbon monoxide

B. 2 g of carbon dioxide

C. 2 g of sulphur dioxide

D. 2 g of water

Answer: D



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36. Mg^{2+} is isoelectronic with



Answer: C



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37. Gram molecular volume of oxygen at STP is

A. 3200cm^3

B. 5600cm^3

C. 22400cm^3

D. 11200cm^3

Answer: C



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38. Presence of halogen in organic compounds can be detected using

A. Leibig's test

B. Duma's tes

C. Kjeldahl test

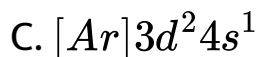
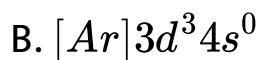
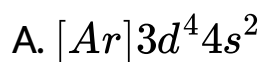
D. Beilstein's test

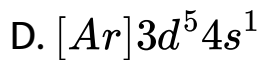
Answer: D



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39. The electronic configuration of Cr^{3+} is





Answer: B



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40. The mass of metal, with equivalent mass 31.75 which would combine with 8 g of oxygen is

A. 1

B. 8

C. 3.175

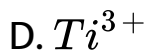
D. 31.75

Answer: D



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41. Which of the following forms a colourless solution in aqueous medium?



Answer: C



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42. When a sulphur sol is evaporated sulphur is obtained. On mixing with water sulphur sol is not formed. The sol is

A. lyophilic

B. reversible

C. hydrophobic

D. hydrophilic

Answer: C



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43. An alkyl halide reacts with alcoholic ammonia in a sealed tube, the product formed will be a

- A. tertiary amine
- B. a secondary amine
- C. a primary amine
- D. a mixture of all the three

Answer: D



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44. When concentrated H_2SO_4 is heated with P_2O_5 , the acid is converted into

A. a mixture of sulphur dioxide and sulphur trioxide

B. sulphur trioxide

C. sulphur dioxide

D. sulphur

Answer: B



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45. Entropy of the universe is

- A. constant
- B. zero
- C. continuously decreasing
- D. continuously increasing

Answer: D



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46. Which of the following salts on being dissolved in water gives $pH > 7$ at $25^\circ C$?

A. KCN

B. KNO_3

C. NH_4Cl

D. NH_4CN

Answer: A



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47. The reagent used in Clemmensen reduction is

A. conc. H_2SO_4

B. $Zn - \frac{Hg}{conc.} HCl$

C. *aq.* KOH

D. *alc.* KOH

Answer: B



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48. When KBr is dissolved in water. K^+ ions are

A. hydrated

B. hydrolysed

C. reduced

D. oxidised

Answer: A



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49. The noble gas mixture is cooled in a coconut bulb at 173 K. The gases that are not adsorbed are

A. Ne and Xe

B. He and Xe

C. Ar and Kr

D. He and Ne

Answer: D



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50. The volume of 10 N and 4 N HCl required to make 1 L of 7 N HCl are

- A. 0.50 litre of 10 N HCl and 0.50 litre of 4N HCl
- B. 0.60 litre of 10 N HCl and 0.40 litre of 4 N HCl
- C. 0.80 litre of 10 N HCl and 0.20 litre of 4N HCl
- D. 0.75 litre of 10 N HCl and 0.25 litre of 4 N HCl

Answer: A



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51. A metal present in insulin is

A. aluminium

B. zinc

C. iron

D. copper

Answer: B



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52. Carbon forms two oxides which have different compositions. The equivalent mass of which remains

constant?

A. oxygen

B. carbon

C. both carbon and oxygen

D. neither carbon nor oxygen

Answer: A



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53. Maximum number of molecules of CH_3I that can react with a molecule of CH_3NH_2 are

A. 3

B. 4

C. 2

D. 1

Answer: A



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54. Ellingham diagram represents a graph of

A. ΔG vs P

B. ΔS vs P

C. ΔG° vs T

D. ΔG vs T

Answer: C



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55. Identify the ore not containing iron.

A. Limonite

B. Siderite

C. Carnallite

D. Chalcopyrites

Answer: C



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56. In which of the following process, a maximum increase in entropy is observed?

A. Melting of ice

B. Sublimation of naphthalene

C. Condensation of water

D. Dissolution of salt in water

Answer: B



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57. Decomposition of benzene diazonium chloride by using $\frac{Cu_2Cl_2}{HCl}$ to form chlorobenzene is

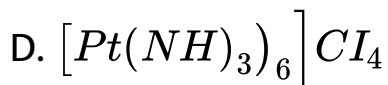
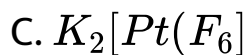
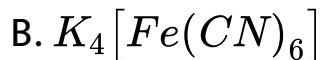
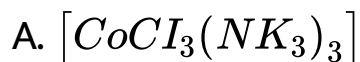
- A. Rasching's reaction
- B. Sandmeyer's reactio
- C. Kolbe's reaction
- D. Cannizzaro's reaction

Answer: B



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58. Which complex cannot ionise in solution?

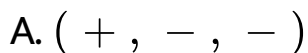


Answer: A



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59. Considering the reaction:



B. (- , + , +)

C. (- , - , -)

D. (- , + , -)

Answer: D



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60. The product formed when hydroxylamine condenses with a carbonyl compound is called

A. hydrazide

B. oxime

C. hydrazine

D. hydrazone

Answer: B



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