

APPLIED CHEMISTRY-I
1st Exam/Common/0451/5404/Dec'11



M. Marks: 75

Duration : 2½ Hrs.

- Which of the following is not one of the seven fundamental units?
a) Kilogram b) Candela
c) Mole d) Watt
- 1 calorie = Joules
a) 4.2 b) 4.8
c) 4.6 d) 4.9
- Freezing point of water at 1 atm pressure of Kelvin scale is
a) 0 K b) 1 K
c) -273 K d) +273 K
- Which of the following is not an element?
a) Diamond b) Graphite
c) Ozone d) Sand
- Which of the following is a metalloid?
a) Antimony b) aluminium
c) copper d) silver
- Which has the maximum viscosity?
a) Water b) glycol
c) acetone d) ethanol
- The charge on a cation M is +2 and on anion A is -3. The compound formed has the formula
a) MA_2 b) M_2A_3
c) M_3A_2 d) M_2A
- NaCl is a chemical formula of:
a) Washing soda
b) baking soda
c) sugar d) common salt
- Which of the following has the largest number of atoms?
a) 0.5 g atom of C .
b) .5 g of C c) 0.25 mole of C
d) 1 g of C
- Mass of 0.40 moles of CO_2 is
a) 40g b) 44g
c) 17.6g d) 12.6g
- 1 a.m.u. is mass of :
a) 1 atom of C
b) 12 atoms of C
c) $1/12^{th}$ of C atom
d) 6.022×10^{23} atoms of C
- Mass of 0.1 mole of $CaCO_3$ is
a) 1 g b) 10 g
c) 100 g d) 1000g
- Neutrons are present in all atoms except
a) He b) C
c) H d) Ne
- The designation of an orbital with $n=4$ and $l=3$ is
a) 4s b) 2P
c) 4d d) 4f
- The lightest particle among the following is
a) Proton b) neutron
c) electron
d) atom of hydrogen
- A pi bond is formed by the overlapping of
a) S-s orbital b) s-p orbital
c) p-p d) d-d orbital
- Series of lines present in visible region of Hydrogen spectrum is
a) Lyman b) Balmer
c) Paschen d) Brackett
- As we move away from nucleus, the energy of the shell
a) Decreases b) increases
c) remains the same
d) neither decreases nor
- Which of the following noble gases has lowest atomic number
a) Ne b) He
c) Kr d) Xe
- The shape of 2s orbital is
a) Dumbbell b) Tetrahedral
c) Pyramidal d) Spherical
- If the mass of an atom is 90 and number of neutrons is 50 its atomic number is
a) 40 b) 50
c) 90 d) 140
- The quantum number representing shapes of the electron cloud is
a) n b) l
c) m d) s
- The size of the nucleus of an atom is of the order of
a) 10^{-8} b) 10^{-13}
c) 10^{-4} d) 10^{-6}
- The charge on the electron was found by .
a) J.J.Thomsan
b) miliken c) Faraday.
d) Goldstein
- The number of elements present in the 3rd period is
a) 6 b) 18
c) 32 d) 8.
- Every period in the periodic table ends with
a) An alkali metal
b) a halogen c) an inert gas
d) a transition element
- The element with atomic number 26 will be found in the group
a) 4 b) 6
c) 8 d) 10
- The total number of actinides in the periodic table are
a) 12 b) 13
c) 14 d) 15
- The elements of group 16 in periodic table are known as
a) Alkali metals
b) alkaline earths
c) chalcogens d) halogens
- Halogens belong to
a) p-block b) s-block
c) d-block d) f-block
- In the periodic table, the position of the element still uncertain is of
a) He b) H
c) Li d) C
- The purest form of water obtained from natural sources is:
a) Spring water
b) rainwater c) sea water
d) lake water
- Temporary hardness of water is due to presence of calcium and magnesium
a) Chlorides b) Sulphates
c) Bicarbonates
d) Nitrates
- The process of destroying the disease producing bacteria or micro-organisms from water is known as
a) aeration
b) sedimentation
c) coagulation
d) disinfection
- Permanent hardness is due to the presence of Ca and Mg as
a) carbonates only
b) bicarbonates only
c) chlorides only
d) chlorides and sulphates
- Permanent hardness can be removed by adding
a) Cl_2 b) Na_2CO_3
c) Bleaching powder
d) $KMnO_4$
- The chemical name of permutit is:
a) Potassium zeolite
b) sodium zeolite
c) calcium zeolite
d) magnesium zeolite
- Hardness can be estimated
a) Clark's method
b) soap titration method
c) EDTA method
d) both b and c
- On boiling water becomes free from:
a) permanent hardness
b) temporary hardness
c) suspended impurities
d) floating impurities

40. Exhausted permittit is regenerated by washing it with:
 a) NaCl b) NaOH
 c) HCl d) KOH
41. The temporary hardness of water due to calcium bicarbonates can be removed by :
 a) Bleaching powder
 b) sodium carbonate
 c) Chlorine
 d) Potassium carbonate
42. In hot soda lime process, temporary hardness of water can be removed by
 a) lime
 b) magnesium hydroxide
 c) fine sand layer
 d) coarse sand layer
- 43: The process of removing extra common salt from water is called:
 a) De-ionisation
 b) desalination
 c) disinfection d) softening
44. Coagulants help in settling of :
 a) Colloidal particles only
 b) Fine suspended impurities
 c) suspended impurities only
 d) both a and c
45. A law which governs the effect of conc. On the rate of reaction is called
 a) Dalton law
 b) Le-chatelier s principle
 c) Law of chem. equilibriul
 d) Law of mass action
46. Theory of ionisation was given by:
 a) Bohr b) Arrhenius
 c) Rutherford d) Newton
47. The conjugate acid of NH_2^- is
 a) NH_3 b) NH_2OH
 c) NH_4^+ d) N_2H_4
48. Ionic product of water changes when
 a) Anacid is added to water
 b) a base is added to water
 c) both acid and base are added to water
 d) temp. is changed
49. A buffer mixture of ammonium chloride and ammonium hydroxide is diluted with water, its pH will
 a) Increases b) decreases
 c) remains the same
 d) becomes 7
50. Buffer action of a buffer is due to :
 a) Association
 b) common ion effect
 c) dissociation
 d) heat production
51. The indicator used in titration of strong acid and strong base is
 a) litmus b) methyl orange
 c) phenolphthalein
- d) methyl red
52. HCl is stronger acid than acetic acid because
 a) It can neutralise large quantity of alkali
 b) it can corrode any thing it comes in contact
 c) it ionises completely to ions in aqueous soln.
 d) none of these
53. Hydrolysis of sodium acetate will give:
 a) Basic soln. b) acidic soln.
 c) neutral soln. d) normal soln.
54. Anaqueous soln. whose pH is 0 is:
 a) Alkaline b) acidic
 c) neutral d) amphoteric
55. Strong electrolytes are those which:
 a) Dissolve readily in water
 b) conduct electricity
 c) dissociate into ions at high dilution
 d) can not dissociate into ions
56. The unit of electrochemical equivalent is:
 a) Gram b) gram/ampere
 c) gram/coulombs
 d) coulombs/gram
57. One Faraday is equal to
 a) 9650 coulombs
 b) 39650 coulombs
 c) 29650 coulombs
 d) 96500 coulombs
58. On electrolys is of dil. H_2SO_4 soln. between platinum electrodes, the gas evolved at the anode is
 a) O_2 b) SO_2
 c) H_2 d) SO_2
59. Which of the following battery is rechargeable?
 a) Dry cell b) mercury cell
 c) Ni-Cd cell d) $\text{H}_2\text{-O}_2$ cell
60. In electrolytic refining metal to be purified is made as ;
 a) Anode b) cathode
 c) neutral d) none
61. Reducing agent is a substance which can
 a) Accept electrons
 b) accept protons
 c) donate electrons
 d) donate protons
62. E.C.E. is more for
 a) Hydrogen b) copper
 c) zinc d) silver
63. During electrolysis, all ions
 a) Move in the same direction
 b) move towards oppositely charged electrode
 c) remains stationary
 d) none of these
64. Electric current is the flow of
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 c) electrons d) none of these
65. When aqueous sodium chloride is electro lysed, the product obtained at the cathode is
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 c) sodium metal
 d) oxygen
66. The reactions in which oxidation and reduction go side by side are called
 a) Oxidation reaction
 b) reduction reaction
 c) redox reaction
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67. In the electroplating of metals, anode is made up of
 a) Pure metal
 b) impure metal
 c) both a and b
 d) electrolyte
68. Tetravalency of carbon can be explained by
 a) Resonance
 b) hybridization
 c) inductive effect
 d) none of these
69. Graphite is used as electrodes because 'it has the property of :
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 b) Bad conduction of electricity
 c) Metallic lustre
 d) None of these
70. The property of self linking of carbon atoms is known as
 a) Catenation
 b) polymerisation
 c) carbonistation
 d) none of these
71. The common name of H_3CCOOH is:
 a) Formic acid b) acetic acid
 c) carbonic acid d) non of these
72. Hydrocarbons containing triple bonds are known as:
 a) Alkanes b) alkenes
 c) alkynes d) none of these
73. Cyanides are also known as
 a) Alkane nitriles
 b) imines
 c) amines d) amides
74. The organic compound present in vinegar is :
 a) Ethanoic acid
 b) propanoic acid
 c) methanoic acid
 d) butanoic acid
75. the aromatic smell of flowers is due to the presence of:
 a) Alcohols b) acids
 c) esters d) amines

APPLIED CHEMISTRY-II

2nd Exam/Common/0451/5404/Dec'11



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c) $1/12^{th}$ of C atom
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47. Mass of 0.1 mole of $CaCO_3$ is
a) 1 g b) 10 g
c) 100 g d) 1000g
48. Neutrons are present in all atoms except
a) He b) C
c) H d) Ne
49. The designation of an orbital with $n=4$ and $l=3$ is
a) 4s b) 2P
c) 4d d) 4f
50. The lightest particle among the following is
a) Proton b) neutron
c) electron
d) atom of hydrogen
51. A pi bond is formed by the overlapping of
a) S-s orbital b) s-p orbital
c) p-p d) d-d orbital
52. Series of lines present in visible region of Hydrogen spectrum is
a) Lyman b) Balmer
c) Paschen d) Brackett
53. As we move away from nucleus, the energy of the shell
a) Decreases b) increases
c) remains the same
d) neither decreases nor
54. Which of the following noble gases has lowest atomic number
a) Ne b) He
c) Kr d) Xe
55. The shape of 2s orbital is
a) Dumbbell b) Tetrahedral
c) Pyramidal d) Spherical
56. If the mass of an atom is 90 and number of neutrons is 50 its atomic number is
a) 40 b) 50
c) 90 d) 140
57. The quantum number representing shapes of the electron cloud is
a) n b) l
c) m d) s
58. The size of the nucleus of an atom is of the order of
a) 10^{-8} b) 10^{-13}
c) 10^{-4} d) 10^{-6}
59. The charge on the electron was found by .
a) J.J.Thomsan
b) miliken c) Faraday.
d) Goldstein
60. The number of elements present in the 3rd period is
a) 6 b) 18
c) 32 d) 8 .
61. Every period in the periodic table ends with
a) An alkali metal
b) a halogen c) an inert gas
d) a transition element
62. The element with atomic number 26 will be found in the group
a) 4 b) 6
c) 8 d) 10
63. The total number of actinides in the periodic table are
a) 12 b) 13
c) 14 d) 15
64. The elements of group 16 in periodic table are known as
a) Alkali metals
b) alkaline earths
c) chalcogens d) halogens
65. Halogens belong to
a) p-block b) s-block
c) d-block d) f-block
66. In the periodic table, the position of the element still uncertain is of
a) He b) H
c) Li d) C
67. The purest form of water obtained from natural sources is:
a) Spring water b) rainwater
c) sea water d) lake water
68. Temporary hardness of water is due to presence of calcium and magnesium
a) Chlorides b) Sulphates
c) Bicarbonates
d) Nitrates
69. The process of destroying the disease producing bacteria or micro-organisms from water is known as
b) aeration b) sedimentation
c) coagulation
d) disinfection
70. Permanent hardness is due to the presence of Ca and Mg as
a) carbonates only
b) bicarbonates only
c) chlorides only
d) chlorides and sulphates
71. Permanent hardness can be removed by adding
a) Cl_2 b) Na_2CO_3
c) Bleaching powder
d) $KMnO_4$
72. The chemical name of permutit is:
a) Potassium zeolite
b) sodium zeolite
c) calcium zeolite
d) magnesium zeolite
73. Hardness can be estimated
a) Clark's method
b) soap titration method
c) EDTA method
d) both b and c
74. On boiling water becomes free from:
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75. Exhausted permutit is regenerated by washing it with:
a) NaCl b) NaOH
c) HCl d) KOH

APPLIED CHEMISTRY-II

2nd Exam/Common/0451/5404/Dec'11



M. Marks: 75

Duration : 2½ Hrs.

- Reducing agent is a substance which can
 - Accept electrons
 - accept protons
 - donate electrons
 - donate protons
- E.C.E. is more for
 - Hydrogen
 - copper
 - zinc
 - silver
- During electrolysis, all ions
 - Move in the same direction
 - move towards oppositely charged electrode
 - remains stationary
 - none of these
- Electric current is the flow of
 - Ions
 - atoms
 - electrons
 - none of these
- When aqueous sodium chloride is electro lysed, the product obtained at the cathode is
 - Hydrogen
 - chlorine
 - sodium metal
 - oxygen
- The reactions in which oxidation and reduction go side by side are called
 - Oxidation reaction
 - reduction reaction
 - redox reaction
 - exothermic reaction
- In the electroplating of metals, anode is made up of
 - Pure metal
 - impure metal
 - both a and b
 - electrolyte
- Tetravalency of carbon can be explained by
 - Resonance
 - hybridization
 - inductive effect
 - none of these
- Graphite is used as electrodes because 'it has the property of :
 - Good conduction of electricity
 - Bad conduction of electricity
 - Metallic lustre
 - None of these
- The property of self linking of carbon atoms is known as
 - Catenation
 - polymerisation
 - carbonisation
 - none of these
- The common name of H_3CCOOH is:
 - Formic acid
 - acetic acid
 - carbonic acid
 - non of these
- Hydrocarbons containing triple bonds are known as:
 - Alkanes
 - alkenes
 - alkynes
 - none of these
- Cyanides are also known as
 - Alkane nitriles
 - imines
 - amines
 - amides
- The organic compound present in vinegar is :
 - Ethanoic acid
 - propanoic acid
 - methanoic acid
 - butanoic acid
- the aromatic smell of flowers is due to the presence of:
 - Alcohols
 - acids
 - esters
 - amines
- Which of the following is not one of the seven fundamental units?
 - Kilogram
 - Candela
 - Mole
 - Watt
- 1 calorie = Joules
 - 4.2
 - 4.8
 - 4.6
 - 4.9
- Freezing point of water at 1 atm pressure of Kelvin scale is
 - 0 K
 - 1 K
 - 273 K
 - +273 K
- Which of the following is not an element?
 - Diamond
 - Graphite
 - Ozone
 - Sand
- Which of the following is a metalloid?
 - Antimony
 - aluminium
 - copper
 - silver
- Which has the maximum viscosity?
 - Water
 - glycol
 - acetone
 - ethanol
- The charge on a cation M is +2 and on anion A is -3. The compound formed has the formula
 - MA_2
 - M_2A_3
 - M_3A_2
 - M_2A
- NaCl is a chemical formula of:
 - Washing soda
 - baking soda
 - sugar
 - common salt
- Which of the following has the largest number of atoms?
 - 0.5 g atom of C .
 - .5 g of C
 - 0.25 mole of C
 - 1 g of C
- Mass of 0.40 moles of CO_2 is
 - 40g
 - 44g
 - 17.6g
 - 12.6g
- 1 a.m.u. is mass of :
 - 1 atom of C
 - 12 atoms of C
 - $1/12^{th}$ of C atom
 - 6.022×10^{23} atoms of C
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 - 10^{-8}
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 d) floating impurities
55. Exhausted permutit is regenerated by washing it with:
 a) NaCl b) NaOH
 c) HCl d) KOH
56. The temporary hardness of water due to calcium bicarbonates can be removed by :
 a) Bleaching powder
 b) sodium carbonate
 c) Chlorine
 d) Potassium carbonate
57. In hot soda lime process, temporary hardness of water can be removed by
 a) lime
 b) magnesium hydroxide
 c) fine sand layer
 d) coarse sand layer
58. The process of removing extra common salt from water is called:
 a) De-ionisation
 b) desalination
 c) disinfection d) softening
59. Coagulants help in settling of :
 a) Colloidal particles only
 b) Fine suspended impurities
 c) suspended impurities only
 d) both a and c
60. A law which governs the effect of conc. On the rate of reaction is called
 a) Dalton law
 b) Le-chatelier's principle
 c) Law of chem. equilibrium
 d) Law of mass action
61. Theory of ionisation was given by:
 a) Bohr b) Arrhenius
 c) Rutherford d) Newton
62. The conjugate acid of NH_2^- is
 a) NH_3 b) NH_2OH
 c) NH_4^+ d) N_2H_4
63. Ionic product of water changes when
 a) An acid is added to water
 b) a base is added to water
 c) both acid and base are added to water
 d) temp. is changed
64. A buffer mixture of ammonium chloride and ammonium hydroxide is diluted with water, its pH will
 a) Increases b) decreases
 c) remains the same
 d) becomes 7
65. Buffer action of a buffer is due to :
 a) Association
 b) common ion effect
 c) dissociation
 d) heat production
66. The indicator used in titration of strong acid and strong base is
 a) litmus b) methyl orange
 c) phenolphthalein
 d) methyl red
67. HCl is stronger acid than acetic acid because
 a) It can neutralise large quantity of alkali
 b) it can corrode any thing it comes in contact
 c) it ionises completely to ions in aqueous soln.
 d) none of these
68. Hydrolysis of sodium acetate will give:
 a) Basic soln. b) acidic soln.
 c) neutral soln. d) normal soln.
69. Aqueous soln. whose pH is 0 is:
 a) Alkaline b) acidic
 c) neutral d) amphoteric
70. Strong electrolytes are those which:
 a) Dissolve readily in water
 b) conduct electricity
 c) dissociate into ions at high dilution
 d) can not dissociate into ions
71. The unit of electrochemical equivalent is:
 a) Gram b) gram/ampere
 c) gram/coulombs
 d) coulombs/gram
72. One Faraday is equal to
 a) 9650 coulombs
 b) 39650 coulombs
 c) 29650 coulombs
 d) 96500 coulombs
73. On electrolysis of dil. H_2SO_4 soln. between platinum electrodes, the gas evolved at the anode is
 a) O_2 b) SO_2
 c) H_2 d) SO_2
74. Which of the following battery is rechargeable?
 a) Dry cell b) mercury cell
 c) Ni-Cd cell d) H_2 - O_2 cell
75. In electrolytic refining metal to be purified is made as ;
 a) Anode b) cathode
 c) neutral d) none