



CHEMISTRY

BOOKS - NAVNEET CHEMISTRY DIGEST

MULTIPLE CHOICE QUESTIONS

Solid State

1. The packing fraction for a body-centred cube is

A. 0.42

B. 0.53

C. 0.68

D. 0.82

Answer: C



Watch Video Solution

2. The number of tetrahedral sites per sphere in ccp structure is

A. 1

B. 2

C. 3

D. 4

Answer: B



View Text Solution

3. A single substance that exists in two or more forms is called

A. polymorphous

B. amorphous

C. isomorphous

D. monomorphous

Answer: A



Watch Video Solution

4. If r is the radius of an atom in face-centred cubic unit cell of edge length a then

A. $r = \frac{a}{2\sqrt{2}}$

B. $r = \frac{4}{\sqrt{3}}a$

C. $r = 2\sqrt{2}a$

D. $r = \sqrt{\frac{3}{4}}a$

Answer: A::B



Watch Video Solution

5. Which of the following parameters are correct for triclinic lattice ?

A. $\alpha = \beta = \gamma = 90^\circ$ and $a = b = c$

B. $\alpha \neq \beta \neq \gamma \neq 90^\circ$ and $a \neq b \neq c$

C. $\alpha = \gamma = 90^\circ, \beta \neq 90$ and $a \neq b \neq c$

D. $\alpha = \beta = \gamma = 90^\circ$ and $a \neq b \neq c$

Answer: A::B::C::D



View Text Solution

6. An ionic crystal lattice has r_+ / r_- radius ratio of 0.524, its coordination number is

A. 2

B. 4

C. 6

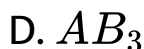
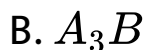
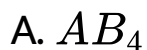
D. 8

Answer: C



Watch Video Solution

7. An ionic compound crystallises in FCC type structure with 'A' ions at the centre of each face and 'B' ions occupying corners of the cube. The formula of compound is -



Answer: A::B::C



Watch Video Solution

8. Due to Frenkel defect the density of ionic solid

- A. increases
- B. decreases
- C. remains same
- D. fluctuates

Answer: A::C



Watch Video Solution

9. The relation $a \neq b \neq c$ and $\alpha \neq \beta \neq \gamma \neq 90^\circ$ represents which crystal system ?

A. Orthorhombic

B. Tetragonal

C. Triclinic

D. Monoclinic

Answer: C



Watch Video Solution

10. The volume of atoms present in body centred cubic unit cell of a metal of atomic radius r is,

A. $\frac{16}{3}\pi r^3$

B. $\frac{8}{3}\pi r^3$

C. $\frac{12}{3}\pi r^3$

D. $\frac{24}{3}\pi r^3$.

Answer: B::C



Watch Video Solution

11. The correct sequence of the atomic layers in cubic close packing is

A. ABABA

B. ABACABAC

C. ABCABC

D. AABBAABB

Answer: A::B::C



View Text Solution

Solutions And Colligative Properties

1. Which of the following terms is independent of temperature ?

A. Normality

B. Molarity

C. Molality

D. Formality

Answer: A::C



Watch Video Solution

2. Partial pressure of solvent in solution of nonvolatile solute is given by equation,

A. $P = x_2 P^\circ$

B. $P^\circ = xP$

$$C. P = x_1 P^\circ$$

$$D. P^\circ = x_1 P$$

Answer: A::C



View Text Solution

3. A liquid has vapour pressure $35 \times 10^3 \text{ Nm}^{-2}$ at 298 K. If the solution contains 0.2 mole fraction of a solute, the vapour pressure of the solution will be

A. $2.8 \times 10^3 \text{ Nm}^{-2}$

B. $7 \times 10^3 \text{ Nm}^{-2}$

C. $7.0 \times 10^4 Nm^{-2}$

D. $28 \times 10^3 Nm^{-2}$

Answer: A::B::C::D



View Text Solution

4. Which of the following is 'not' a colligative property ?

A. Boiling point

B. Depression in freezing point

C. Elevation in boiling point

D. Osmotic pressure

Answer: A::B



Watch Video Solution

5. Which of the following solutions shows maximum depression in freezing point?

A. 0.5 M Li_2SO_4

B. 2M NaCl

C. 0.5 M $Al_2(SO_4)_3$

D. 0.5 M $BaCl_2$

Answer: A::B::C::D



Watch Video Solution

6. van't Hoff factor for $K_4[FeC(N)_6]$ dissociated 10% is

A. 1.1

B. 1.4

C. 0.86

D. 1.6

Answer: A::B::D



[Watch Video Solution](#)

7. The osmotic pressure of 0.2 M KCl solution at 310 K is

A. 10.17 atm

B. 5.084 atm

C. 8.36 atm

D. 12.2 atm

Answer: A



[Watch Video Solution](#)

8. The units of K_b are

A. $Kmol^{-1}kg^{-1}$

B. $Kkg^{-1}mol$

C. $K Kg mol^{-1}$

D. $Kgmol^{-1}$

Answer: A::C



Watch Video Solution

9. The boiling point of water at high altitude is low,
because

- A. the temperature is low
- B. the atmospheric pressure is low
- C. the temperature is high
- D. the atmospheric pressure is high

Answer: A::B::C



Watch Video Solution

10. 0.05 m urea solution will have freezing point (

$$K_f = 1.86 \text{ K kg mol}^{-1})$$

A. 273.093 K

B. 273.186 K

C. 272.907 K

D. 272.814 K

Answer: B::C



View Text Solution

11. In osmosis

A. solvent molecules pass from high
concentration of solute to low concentration

B. solvent molecules pass from a solution of low concentration of solute to a solution of high concentration of solute

C. solute molecules pass from low concentration to high concentration

D. solute molecules pass from high concentration to low concentration

Answer: A::B::C



View Text Solution

Chemical Thermodynamics And Energetics

1. Which of the following is not an extensive property ?

A. Molarity

B. Molar heat capacity

C. Mass

D. Volume

Answer: A::B::C



Watch Video Solution

2. A gas expands in volume from 2L to 5L against a pressure of 1 atm at constant temperature. The work done by the gas will be

A. 3 J

B. -303.9 J

C. $-303.9 \text{ L} \cdot \text{atm}$

D. $303.9 \text{ L} \cdot \text{atm}$

Answer: B::C



Watch Video Solution

3. Which of the following is an intensive property ?

A. Entropy

B. Weight

C. Refractive index

D. Volume

Answer: A::C::D



Watch Video Solution

4. Which of the following pairs is an extensive property ?

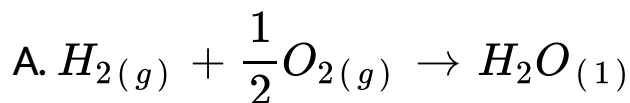
- A. Mass, temperature
- B. Enthalpy, surface tension
- C. Viscosity, work
- D. Volume, entropy

Answer: D

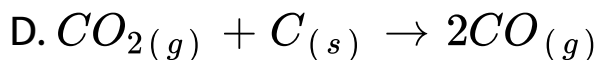
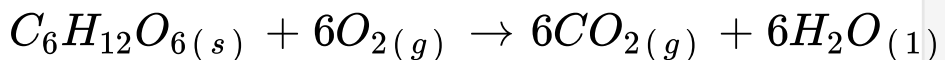


Watch Video Solution

5. For which reaction $\Delta H = \Delta U$?



B.



Answer: A::B::C



View Text Solution

6. If for a reaction ΔH is negative and ΔS is positive then the reaction is

A. spontaneous at all temperatures

- B. non-spontaneous at all temperatures
- C. spontaneous only at high temperatures
- D. spontaneous only at low temperature

Answer: A::B::C::D



View Text Solution

7. The relationship between ΔG° of a reaction and its equilibrium constant is

A. $-\Delta G^\circ = \frac{RT}{\ln K}$

B. $\Delta G^\circ = \frac{RT}{\ln K}$

C. $\frac{RT \ln K}{\Delta G^\circ} = -1$

D. $\Delta G^\circ = RT \ln K$

Answer: A::C::D



View Text Solution

8. For a certain reaction, $\Delta H = -50 \text{ kJ}$ and $\Delta S = -80 \text{ JK}^{-1}$, at what temperature does the reaction turn from spontaneous to non-spontaneous ?

A. 6.25 K

B. 62.5 K

C. 625 K

D. 6250 K

Answer: B::C



View Text Solution

9. For the reaction : $Cl_{2(g)} \rightarrow 2Cl_{(g)}$

A. ΔH is positive, ΔS is positive

B. ΔH is positive, ΔS is negative

C. ΔH is negative, ΔS is negative

D. ΔH is negative, ΔS is positive

Answer: A::D



View Text Solution

10. In which of the following cases, $\Delta G < 0$ at all temperatures ?

A. $\Delta H = 0, \Delta S = 0$

B. $\Delta H > 0, \Delta S < 0$

C. $\Delta H < 0, \Delta S > 0$

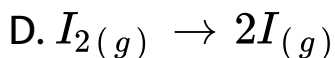
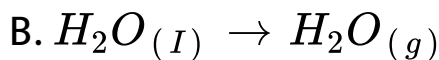
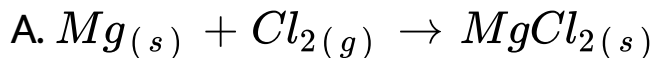
D. $\Delta H < 0, \Delta S < 0$

Answer: A::C::D



View Text Solution

11. For which of the following reactions ΔS is negative ?



Answer: A::B::C



[View Text Solution](#)

Electrochemistry

1. What is the ratio of volumes of H_2 and O_2 liberated during electrolysis of acidified water ?

A. 1 : 2

B. 2 : 1

C. 1 : 3

D. 3 : 1

Answer: A::B



[View Text Solution](#)

2. The SI unit of molar conductivity is

A. $S\text{cm}^2\text{mol}^{-1}$

B. $S\text{dm}^2\text{mol}^{-1}$

C. $S\text{m}^2$

D. $S\text{m}^2\text{mol}^{-1}$

Answer: A::B::D



[View Text Solution](#)

3. The cell constant of a conductivity cell is given by

A. $l \times a$

B. $\frac{a}{l}$

C. $\frac{1}{l \times a}$

D. $\frac{l}{a}$

Answer: A::D



View Text Solution

4. The molar conductivity of cation and anion of salt BA are 180 and 220 mhos $cm^2 mol^{-1}$

respectively. The molar conductivity of salt BA at infinite dilution is -

A. $90\Omega^{-1}cm^2 \cdot mol^{-1}$

B. $110\Omega^{-1}cm^2 \cdot mol^{-1}$

C. $200\Omega^{-1}cm^2 \cdot mol^{-1}$

D. $400\Omega^{-1}cm^2 \cdot mol^{-1}$

Answer: A::B::C::D



View Text Solution

5. The number of electrons that have a total charge of 965 coulombs is

A. 6.022×10^{23}

B. 6.022×10^{22}

C. 6.022×10^{21}

D. 3.011×10^{23}

Answer: A::B::C



View Text Solution

6. During electrolysis, 2A current is passed through an electrolytic solution for 965 S. The number of moles of electrons passed will be

A. 0.02

B. 0.01

C. 200

D. 0.037

Answer: A::B



View Text Solution

7. In Nernst equation, the constant 0.0592 at 298 K represents the value of

A. $\frac{RT}{nF}$

B. $\frac{RT}{F}$

C. $\frac{2.303RT}{nF}$

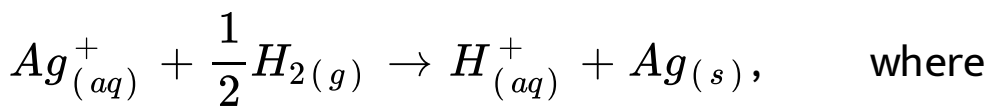
D. $\frac{2.303RT}{F}$

Answer: B::C::D



View Text Solution

8. ΔG° for the reaction



standard potential for silver half cell reaction is 0.8 V, will be

A. -77.2 kJ

B. $+77.2 \text{ kJ}$

C. 154.4 kJ

D. -38.6 kJ

Answer: A::B



View Text Solution

9. Consider the cell, $\text{Pt} | \text{H}_{2(g)} | \text{H}^+_{(aq)} || \text{I}^-_{(aq)} | \text{I}_{2(s)}$.

If the standard cell potential is 0.54 V then the standard potential for cathode half reaction will be

A. 0 V

B. 0.54 V

C. +0.54 V

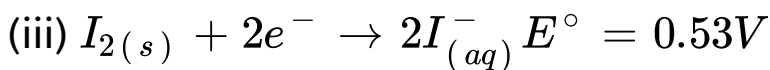
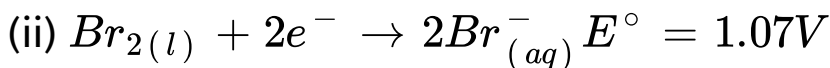
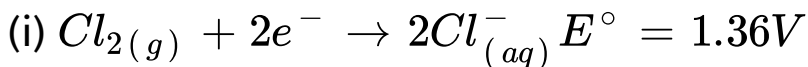
D. 1.08V

Answer: C::D



View Text Solution

10. Consider the following half reactions and choose the correct alternative



A. Br_2 cannot oxidize I^-

B. Cl_2 can oxidize Br^- but not I^-

C. I_2 can oxidize Cl^-

D. Br_2 can oxidize I^- but not Cl^-

Answer: A::B::C::D



View Text Solution

11. The efficiency of the hydrogen-oxygen fuel cell is about

A. 0.2

B. 0.4

C. 0.7

D. 0.9

Answer: C



View Text Solution

12. Consider the cell

$Pt|Cl_{2(g)}|HCl_{(aq)}|Br_{2(l)}|Pt$. If concentration of HCl is increased, the cell potential will

- A. increase
- B. decrease
- C. remain the same
- D. become maximum

Answer: A::C



View Text Solution

1. In the reaction $a + 3B \rightarrow 2C$, the rate of formation of C is

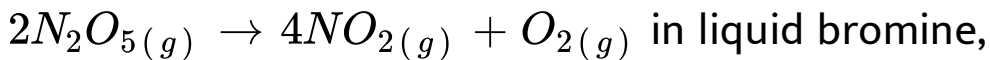
- A. the same as rate of consumption of A
- B. the same as the rate of consumption of B
- C. twice the rate of consumption of A
- D. $3/2$ times the rate of consumption of B

Answer: A::C



View Text Solution

2. For the reaction



which of the following rate equation is 'incorrect' ?

A. $-\frac{1}{2} \frac{d[N_2O_5]}{dt}$

B. $-\frac{1}{4} \frac{d[NO_2]}{dt}$

C. $\frac{d[O_2]}{dt}$

D. $\frac{1}{4} \frac{d[NO_2]}{dt}$

Answer: A::B::D



View Text Solution

3. The integrated rate equation for first order reaction $A \rightarrow$ products is given by

A. $k = \frac{2.303}{t} \ln. \frac{[A]_0}{[A]_t}$

B. $k = -\frac{1}{t} \ln. \frac{[A]_t}{[A]_0}$

C. $k = \frac{2.303}{t} \log_{10} \cdot \frac{[A]_t}{[A]_0}$

D. $k = \frac{1}{t} \ln. \frac{[A]_t}{[A]_0}$

Answer: A::B

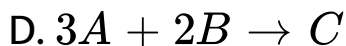
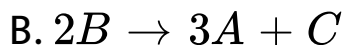
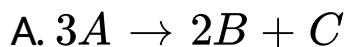


View Text Solution

4. The rate of reaction for certain reaction is expressed as :

$$\frac{1}{3} \frac{d[A]}{dt} = - \frac{1}{2} \frac{d[B]}{dt} = - \frac{d[C]}{dt}$$

The reaction is



Answer: A::B::C



View Text Solution

5. The rate of a reaction is expressed in the units

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

B. $\text{mol dm}^{-3} \text{s}^{-1}$

C. Ms

D. $\text{M}^{-1} \text{s}^{-1}$

Answer: A::B::C::D



View Text Solution

6. For the reaction, $2A + B \rightarrow 3C$, the reaction rate is equal to

A. $\frac{1}{2} \frac{d[A]}{dt}$

B. $\frac{1}{3} \frac{d[C]}{dt}$

C. $\frac{d[B]}{dt}$

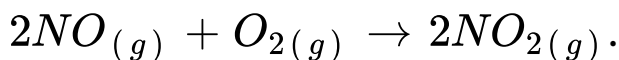
D. $\frac{-d[A]^2}{dt}$

Answer: A::B::C::D



View Text Solution

7. Consider the reaction



If $\frac{d[NO_2]}{dt} = 0.052 \text{ M/s}$ then, $-\frac{d[O_2]}{dt}$ will be

A. 0.052 M/s

B. 0.114 M/s

C. 0.026 M/s

D. -0.026 M/s

Answer: B::C



View Text Solution

8. The half-life of a first order reaction is 30 min and the initial concentration of the reactant is 0.1 M. If the initial concentration of reactant is doubled, then the half-life of the reaction will be

A. 1800 s

B. 60 min

C. 15 min

D. 900 s

Answer: A



View Text Solution

9. The half-life period of a zero order reaction is given by

A. $\frac{[A]_0}{k}$

B. $\frac{2.303k}{[A]_0}$

C. $\frac{[A]_0}{2k}$

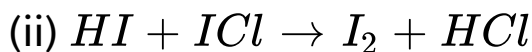
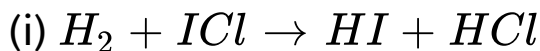
D. $\frac{2[A]_0}{k}$

Answer: A::B::C



View Text Solution

10. The reaction between $H_{2(g)}$ and $ICl_{(g)}$ occurs in the following steps :



The reaction intermediate in the reaction is

A. HCl

B. HI

C. I_2

D. ICl

Answer: B



View Text Solution

11. The time required for a first order reaction to complete 90% is

A. 0.1k

B. $\frac{k}{2.303}$

C. $\frac{0.1 \times 2.303}{2k}$

D. $\frac{2.303}{k}$

Answer: B::C::D



View Text Solution

12. A catalyst increases the rate of the reaction by

A. increasing E_a

B. increasing T

C. decreasing E_a

D. decreasing T

Answer: A::C::D



View Text Solution

General Principles And Processes Of Isolation Of Elements

1. The ores that are concentrated by floatation method are :

A. Carbonates

B. Sulphides

C. Oxides

D. Phosphates

Answer: B::D



View Text Solution

2. Flux is added to

A. obtain pure metal

B. obtain metal from ore

C. purify impure metal

D. remove impurities from ores

Answer: D



View Text Solution

3. Gangue is

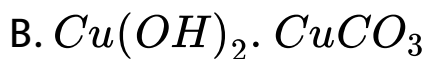
- A. impure metal
- B. impure ore
- C. impurity in an ore
- D. pure metal

Answer: A::C



View Text Solution

4. What is the chemical composition of malachite ?



Answer: B::C



View Text Solution

5. A process of heating the ore in absence of air is called

A. roasting

B. leaching

C. liquation

D. calcination

Answer: A::C::D



View Text Solution

6. Silica is used as

- A. an acidic flux
- B. a basic flux
- C. a reducing agent
- D. an oxidising agent

Answer: A::C::D



View Text Solution

7. Zone refining is a method to obtain

- A. Very high temperature
- B. Ultra pure Al

C. Ultrapure germanium

D. Ultra pure oxides

Answer: A::C



View Text Solution

8. In extraction of iron, limestone is used for

A. formation of slag

B. reduction of Fe ore

C. purification of Fe formed

D. oxidation of Fe ore

Answer: A



View Text Solution

9. Highest carbon content iron is

A. stainless steel

B. wrought iron

C. cast iron

D. mild iron

Answer: A::C



Watch Video Solution

10. Hoop's process is used in the extraction of

A. Zn

B. Cu

C. Al

D. Fe

Answer: A::C



View Text Solution

11. In blast furnace, iron oxide is reduced by

A. Silica

B. CO

C. C

D. Lime stone

Answer: B::C



Watch Video Solution

12. Van Arkel method of purification of metals involves converting the metal to

A. volatile compound

B. volatile unstable compound

C. non-volatile stable compound

D. non-volatile unstable compound

Answer: A::B::C::D



Watch Video Solution

P Block Elements

1. The basicity of phosphorus acid (H_3PO_3) is

..... .

A. one

B. two

C. four

D. three

Answer: B



Watch Video Solution

2. Which one has the lowest boiling point ?

A. H_2O

B. H_2S

C. H_2Se

D. H_2Te

Answer: B



Watch Video Solution

3. The element that does not exhibit allotropy is

A. As

B. Sb

C. Bi

D. N

Answer: B::C



View Text Solution

4. PCl_5 exists but NCl_5 does not due to

A. inertness of N_2

B. NCl_5 is unstable

C. larger size of N

D. non-availability of vacant d-orbitals

Answer: A::B::C::D



View Text Solution

5. Antimony behaves as a non-metal in

A. conc. HCl

B. conc. HNO_3

C. conc. H_2SO_4

D. dilute H_2SO_4

Answer: B::C



View Text Solution

6. When SO_2 is passed through acidified $K_2Cr_2O_7$ solution

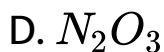
- A. the solution turns blue
- B. the solution is decolourized
- C. reduction of SO_2 takes place
- D. green $Cr_2(SO_4)_3$ is formed

Answer: B::C::D



Watch Video Solution

7. $FeSO_4$ forms brown ring with

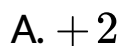


Answer: C



Watch Video Solution

8. The oxidation state of sulphur in peroxy disulphuric acid is



B. + 3

C. + 4

D. + 6

Answer: D



View Text Solution

9. Oxygen molecule shows:

A. Paramagnetism

B. Dimagnetism

C. Ferro magnetism

D. Ferri magnetism

Answer: A



View Text Solution

10. The structure of IF_7 is

A. Tetrahedral

B. Octahedral

C. Trigonal bipyramidal

D. Pentagonal bipyramidal

Answer: A::B::D



Watch Video Solution

11. Hybridisation in ClF_3 is

A. sp^3

B. sp^3d

C. dsp^3

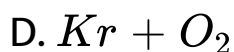
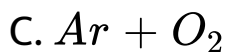
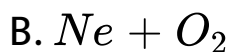
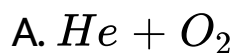
D. sp^3d^2

Answer: B::C::D



Watch Video Solution

12. Which mixture is used for respiration by deep sea divers?



Answer: A::B



Watch Video Solution

13. Noble gas used in the miner's cap lamp is

A. krypton

B. argon

C. helium

D. radon

Answer: A



View Text Solution

D And F Block Elements

1. The properties of Zr and Hf are similar because

- A. both have same atomic radii
- B. both belong to d-block
- C. both belong to same series
- D. both have same number of electrons

Answer: A::B::C::D



Watch Video Solution

2. The number of d-electrons retained in Fe^{2+} (At. no. of Fe = 26) ions is

A. 3

B. 4

C. 5

D. 6

Answer: D



Watch Video Solution

3. Chromyl chloride test is for

A. chloride salt

B. nitrate salt

C. thiosulphate salt

D. sulphate salt

Answer: A::C::D



View Text Solution

4. What is the general electronic configuration of transition elements

A. $(n - 1)d^{1-10}$

B. $(n - 1)d^{10}ns^2$

C. $(n - 1)d^{1-10}ns^{1-2}$

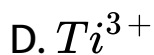
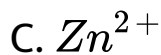
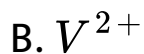
D. $(n - 1)d^5ns^1$

Answer: A::B::C::D



Watch Video Solution

5. The metal ion which is NOT coloured, is



Answer: B::C



View Text Solution

6. A gas when passed through the $K_2Cr_2O_7$ and dil. H_2SO_4 solution, turns it green, the gas is

A. H_2S

B. NH_3

C. Cl_2

D. SO_2

Answer: B::D



[View Text Solution](#)

7. Lanthanoids are placed in

A. 3^{rd} group and 7^{th} period

B. 3^{rd} group and 6^{th} period

C. 4^{th} group and 7^{th} period

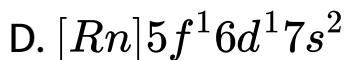
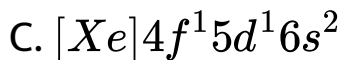
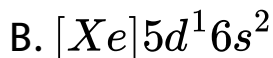
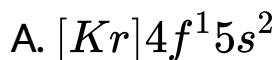
D. 3^{rd} group and 5^{th} period

Answer: A::B::C::D



[View Text Solution](#)

8. The electronic configuration of Lanthanum is

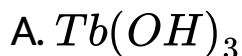


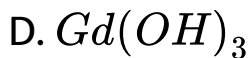
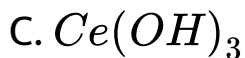
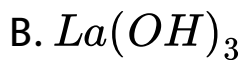
Answer: A::B::D



View Text Solution

9. Among the following , the strongest base is



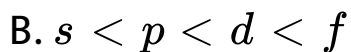
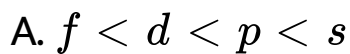


Answer: A::B::C



View Text Solution

10. The shielding effect of electrons increases in the order of



C. $f > d > s < p$

D. $s > p > d = f$

Answer: A::D



View Text Solution

11. When KOH solution is added to potassium dichromate solution, the colour of solution changes to yellow because :

A. chromate ion changes to dichromate ion

B. dichromate ion changes to chromate ion

C. oxidation number of chromium changes from

+6 to +4

D. oxidation number of chromium changes from

+4 to +6

Answer: A::B::C::D



View Text Solution

12. The highest magnetic moment is shown by

A. V^{3+}

B. Co^{3+}

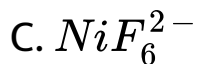
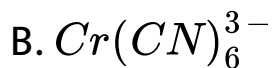
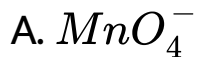


Answer: C



View Text Solution

13. The species with an atom in +6 oxidation state is



Answer: B::C::D



View Text Solution

Coordination Compounds

1. Primary and secondary valencies of platinum in the complex, $[Pt(en)_2Cl_2]$ are

A. 4,6

B. 2,6

C. 4,4

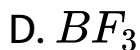
D. 6,4

Answer: B



View Text Solution

2. Which one of the following is NOT a ligand ?



Answer: B::C::D



View Text Solution

3. The oxidation number of Fe in $K_4[Fe(CN)_6]$ is

A. 1

B. 2

C. 4

D. 3

Answer: B



Watch Video Solution

4. In a complex, $[Co(NH_3)_3Cl_3]$,

A. C.N. is 6 and oxidation state is +3

B. Oxidation number +6 and C.N. is 3

C. C.N. is 6 and oxidation state is zero

D. Coordination number and oxidation number
are 3 and +3 respectively

Answer: A::C::D



View Text Solution

5. The oxidation state of Fe in brown complex

$[Fe(H_2O)_5NO]SO_4$ is

A. +1

B. +2

C. +4

D. +3

Answer: C::D



Watch Video Solution

6. The name of $[CoCl_2(NO_2)_2(NH_3)_2]OH$ is

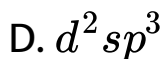
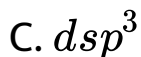
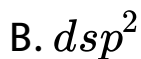
- A. Diamminechloronitritocobalt (III) hydroxide
- B. Amminechloronitro cobalt(III) hydroxide
- C. Diamminedichloridodinitrito-Ncobalt(III)
hydroxide
- D. Cobalt(III) dichlorodiamminedinitro hydroxide

Answer: A::B::C::D



View Text Solution

7. Tetrahedral geometry of a coordination compound involves the following hybridisation.



Answer: A::C



View Text Solution

8. The geometry of a complex due to dsp^2 hybridisation in the central metal ion is

A. triangular planar

B. tetrahedral

C. square planar

D. trigonal bipyramidal

Answer: A::C



Watch Video Solution

9. $[NiCl_4]^{2-}$ has geometry

A. square planar

B. tetrahedral

C. square bipyramidal

D. trigonal bipyramidal

Answer: A::B::D



Watch Video Solution

10. $[Fe(CN)_6]^{4-}$ is

A. inner complex

B. outer complex

C. square planar

D. trigonal bipyramidal

Answer: A::C



Watch Video Solution

Halogen Derivatives Of Alkanes And Arenes

1. Write IUPAC name of product expected from reaction of sodium methoxide and isobutyl bromide.

A. 2-Methoxybutane

B. 2-Methoxy pentane

C. 2-Methoxy propane

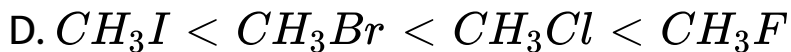
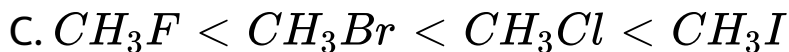
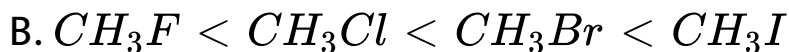
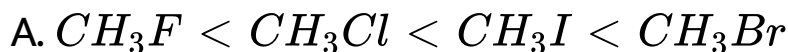
D. 2-Methoxy hexane

Answer: A::B



View Text Solution

2. The order of reactivity in nucleophilic substitution reaction is



Answer: B::C



View Text Solution

3. In a carbocation, the central carbon atom involved is

A. sp -hybridized

B. sp^2 -hybridized

C. sp^3 -hybridized

D. dsp^2 -hybridized

Answer: B::D



[Watch Video Solution](#)

4. The number of asymmetric carbon atom/s in lactic acid is

A. 1

B. 3

C. 2

D. 4

Answer: A



[View Text Solution](#)

5. The action of sodium on alkyl halide to form an alkane is called

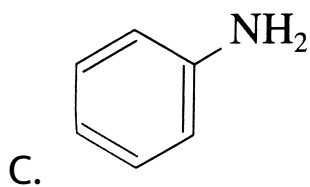
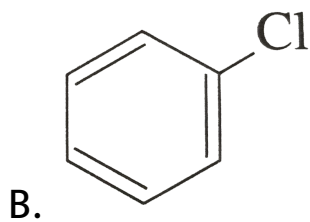
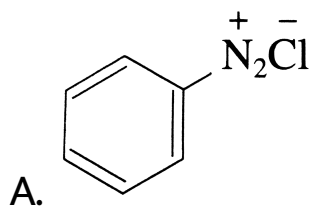
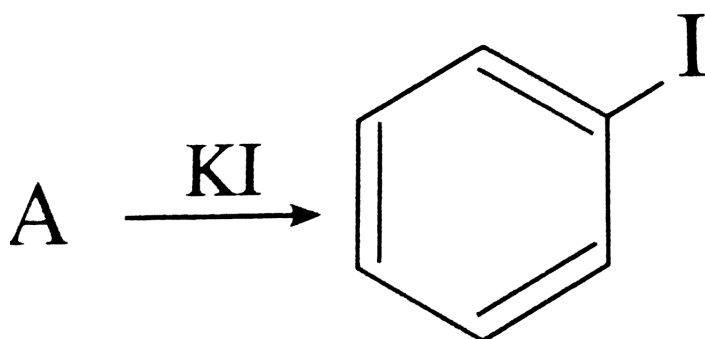
- A. Grignard reaction
- B. Wurtz coupling reaction
- C. isocyanide reaction
- D. halogenation reaction

Answer: A::B::C

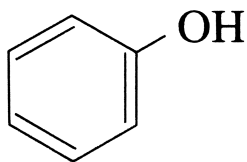


View Text Solution

6. In the reaction,



D.



Answer: A::B::C



Watch Video Solution

7. The number of asymmetric carbon atom in glucose are

A. 2

B. 3

C. 4

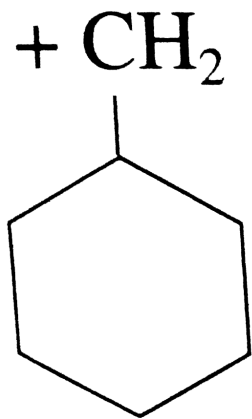
D. 5

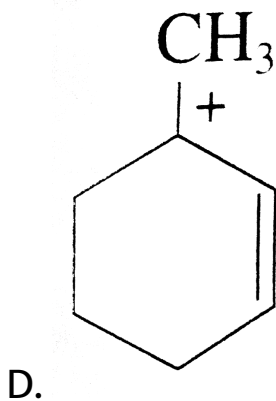
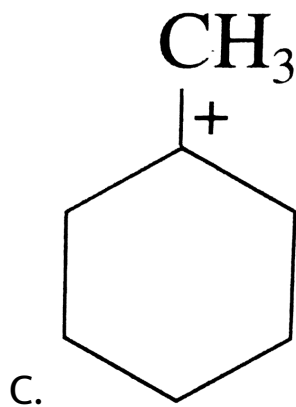
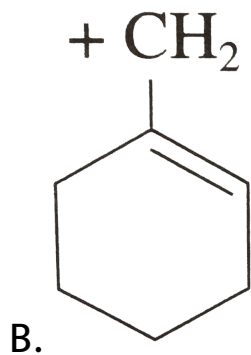
Answer: C::D



View Text Solution

8. The lowest stability of carbocation among the compounds



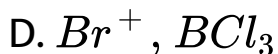
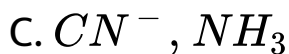
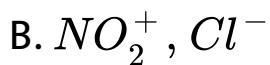
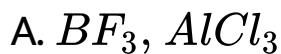


Answer: A::B::C



[View Text Solution](#)

9. In which of the following pairs both are nucleophiles ?



Answer: B::C



[View Text Solution](#)

10. The halogen atom in aryl halides is

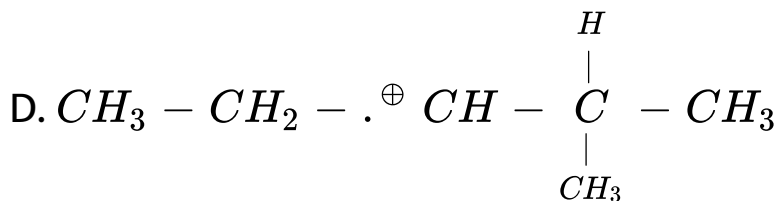
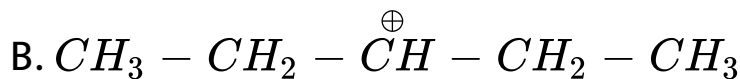
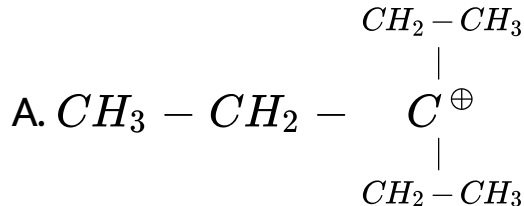
- A. o-and p-directing
- B. m-directing
- C. o, m and p-directing
- D. only m-directing

Answer: A::C::D



View Text Solution

11. Which of the following carbocations is least stable ?



Answer: B::C



View Text Solution

12. But-1-ene on reaction with HCl in the presence of sodium peroxide yields

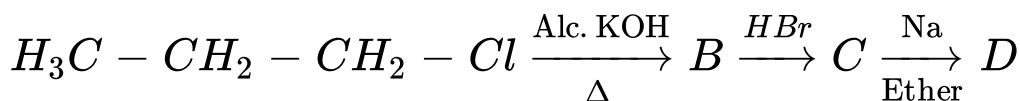
- A. n-butyl chloride
- B. isobutyl chloride
- C. secondary butyl chloride
- D. tertiary butyl chloride

Answer: A::B::C::D



View Text Solution

13. Identify the product D in the following sequence of reactions :



- A. 2, 2-Dimethylbutane
- B. 2, 3-Dimethylbutane
- C. Hexane
- D. 2, 4-Dimethylpentane

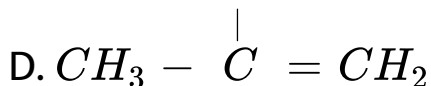
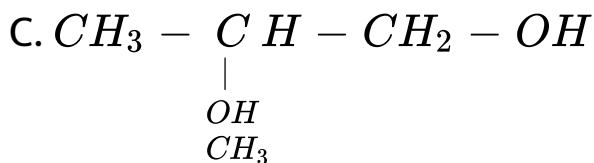
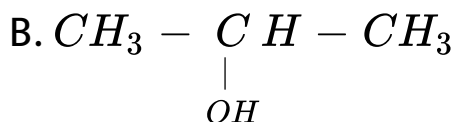
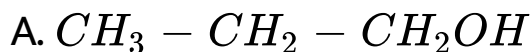
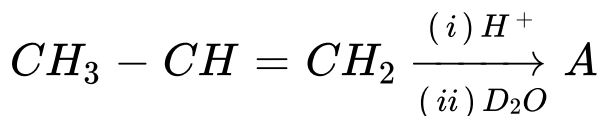
Answer: A::B::C::D



View Text Solution

Alcohols Phenols And Ethers

1. Identify the product of the following reaction



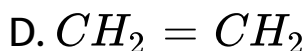
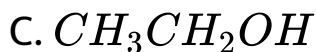
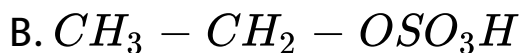
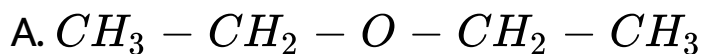
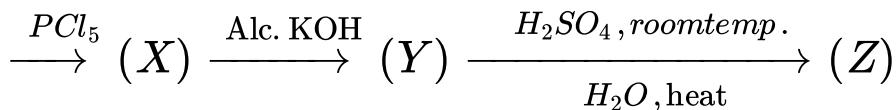
Answer: B::C::D



View Text Solution

2. Identify (Z) in the following reaction series :

Ethanol



Answer: B::C



Watch Video Solution

3. Phenol on treatment with conc. H_2SO_4 at 300 K gives

- A. o-phenol sulphonic acid
- B. p-phenol sulphonic acid
- C. a mixture of o-and p-phenol sulphonic acid
- D. benzoic acid

Answer: A::B::C::D



View Text Solution

4. Phenol on bromination with liquid bromine gives

- A. 2, 4, 5-tribromophenol
- B. p-bromophenol
- C. o-bromophenol
- D. a mixture of p- and o-bromophenol

Answer: A::B::D



View Text Solution

5. Which one of the following alcohols will give ethyl methyl ketone on oxidation ?

- A. Butan-1-ol

B. Butan-2-ol

C. 2-Methylpropan-2-ol

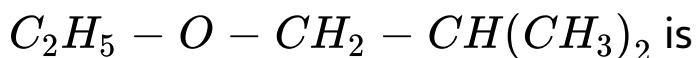
D. Propan-1-ol

Answer: A::B



View Text Solution

6. The IUPAC name of



A. 1-Ethoxy-1-butane

B. 2-Ethoxy-2-butane

C. 1-Ethoxy-2-methylpropane

D. 3-Ethoxy-2-methylpropane

Answer: A::B::C



View Text Solution

7. Benzyl phenyl ether reacts with hydrogen bromide to give

A. benzyl bromide and phenol

B. benzyl alcohol and bromobenzene

C. benzyl bromide and bromobenzene

D. benzyl alcohol and phenol

Answer: A::B::D



View Text Solution

8. Which of the following compounds gives 3-Ethylpentan-3-ol by the action of ethyl magnesium iodide followed by acid hydrolysis ?

A. Propanone

B. Butanone

C. Pentan-2-one

D. Pentan-3-one

Answer: A::C::D



View Text Solution

9. The C-O-C bond angle in dimethyl ether is

A. 110°

B. 112°

C. 111.7°

D. 110.2°

Answer: A::C



View Text Solution

10. 3-Methyl butane-2-ol on heating with HI gives

A. 2-iodo-3-methylbutane

B. 2-iodo-2-methylbutane

C. 1-iodo-3-methylbutane

D. 1-iodo-2-methylbutane

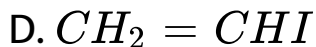
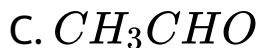
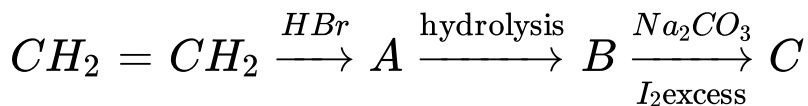
Answer: A::B::D



View Text Solution

Aldehydes Ketones And Carboxylic Acids

1. Identify 'B' from the following reaction :



Answer: B::C



View Text Solution

2. The IUPAC name of $(CH_3)_2C(OH)CH_2COCH_3$ is

- A. 4-Hydroxy-4-methylpentan-2-one
- B. 2-Hydroxy-2-methylpentan-4-one
- C. Diacetone alcohol
- D. 4-Hydroxy-4-methyl-2-oxopentane

Answer: A::B::D



View Text Solution

3. The number of C - C bonds in Hexamethylenetetramine ($(CH_2)_6N_4$ or urotropine) are

A. 9

B. 6

C. 4

D. 0

Answer: D



View Text Solution

4. Dry distillation of a mixture of calcium formate and calcium acetate gives.

A. Formaldehyde

B. acetaldehyde

C. acetone

D. acetophenone

Answer: A::B::C::D



View Text Solution

5. Which of the following carbonyl compounds undergoes aldol condensation ?

- A. Benzaldehyde
- B. Benzophenone
- C. Acetophenone
- D. tert-Butyl phenyl ketone

Answer: A::C



View Text Solution

6. Which of the following carbonyl compounds undergoes self redox reaction in presence of concentrated base ?

- A. 3-Methylpentanal
- B. 2-Chlorobutanal
- C. 2,2-Dimethylpropanal
- D. tert-Butyl methyl ketone

Answer: A::B::C::D



View Text Solution

7. α -halogenation of carboxylic acid is called

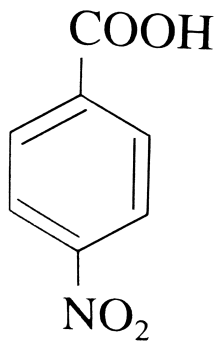
- A. Gattermann reaction
- B. Riemer-Tiemer reaction
- C. Sandmeyer's reaction
- D. HVZ reaction

Answer: A::C::D

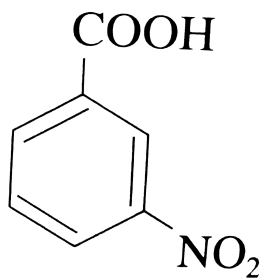


View Text Solution

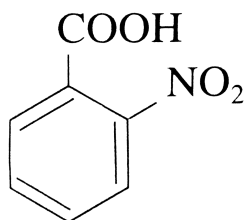
8. The strongest acid among the following is



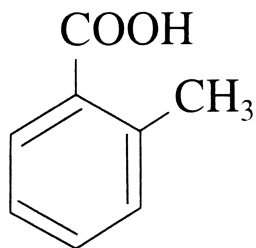
A.



B.



C.



D.

Answer: A::B::C



[View Text Solution](#)

9. Which of the following compound does not give acetic acid on oxidation ?

A. Ethanol

B. Propan-1-ol

C. Propan-2-ol

D. 2-Methylpropan-2-ol

Answer: A::B



[View Text Solution](#)

10. Which of the following will not give yellow precipitate when treated with NaOH and I_2 ?

A. 3-Methylbutan-2-one

B. 2-Methylpentan-3-one

C. Propanone

D. Hexan-2-one

Answer: A::B::C



View Text Solution

11. A β -hydroxyl carbonyl compound is obtained by the action of NaOH on

A. HCHO

B. $\text{C}_6\text{H}_5\text{CHO}$

C. CR_3CHO

D. CH_3CHO

Answer: C::D



View Text Solution

12. Formalin is 40% aqueous solution of

A. Methanal

B. Methanoic acid

C. Methanol

D. Methanamine

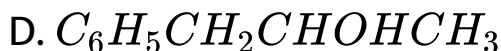
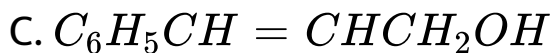
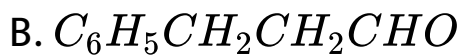
Answer: A



View Text Solution

13. The reaction of $C_6H_5CH = CHCHO$ with $LiAlH_4$ gives

A. $C_6H_5CH_2CH_2CH_2OH$



Answer: A::B::C



View Text Solution

Organic Compounds Containing Nitrogen

1. Which of the following amines cannot be prepared by Gabriel phthalimide synthesis ?

- A. sec-Propylamine
- B. tert-Butylamine
- C. 2-Phenylethylamine
- D. N-Methyl benzyl amine

Answer: A::B::D



View Text Solution

2. The IUPAC name of ethyl dimethyl amine is

- A. 2-amino propane
- B. N, N-dimethylethanamine

C. ethyl methanamine

D. propanamine

Answer: A::B::D



View Text Solution

3. Tertiary butyl amine is a

A. primary amine

B. secondary amine

C. tertiary amine

D. quaternary ammonium salt

Answer: A



View Text Solution

4. How many primary amines are possible for the compound C_3H_9N ?

A. 1

B. 2

C. 3

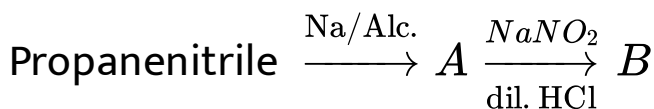
D. 4

Answer: B



[View Text Solution](#)

5. Identify the compound B in the following series of reaction.



A. n-propyl chloride

B. propanamine

C. n-propyl alcohol

D. isopropyl alcohol

Answer: A::C



[View Text Solution](#)

6. Acetoxime on catalytic reduction gives

- A. Acetic acid
- B. acetic anhydride
- C. ethylamine
- D. isopropylamine

Answer: A::D



View Text Solution

7. Secondary nitroalkanes react with nitrous acid to form

- A. red solution
- B. blue solution
- C. green solution
- D. yellow solution

Answer: B



View Text Solution

8. How many moles of methyl iodide are required to convert ethylamine, diethylamine and triethylamine into quaternary ammonium salt, respectively ?

A. 1, 2 and 3

B. 2, 3 and 1

C. 3, 2 and 1

D. 3, 1 and 2

Answer: A::B::C::D



View Text Solution

9. Reduction of benzene diazonium chloride with Zn/HCl gives

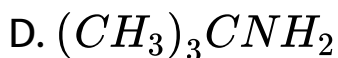
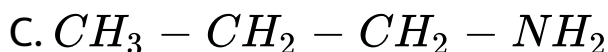
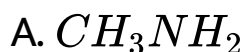
- A. phenyl hydrazine
- B. hydrazine hydrate
- C. aniline
- D. azo benzene

Answer: A::C



View Text Solution

10. Which of the following compounds is NOT prepared by the action of alcoholic NH_3 on alkyl halide ?



Answer: B::C::D



View Text Solution

11. Primary and secondary nitroalkanes containing $\alpha - H$ atom show property of

- A. chain isomerism
- B. tautomerism
- C. optical isomerism
- D. geometrical isomerism

Answer: A::B



View Text Solution

12. The IUPAC name of triethylamine is

A. N, N-Diethylethanamine

B. N, N-Dimethylethanamine

C. N-Ethylethanamine

D. N-Methylethanamine

Answer: A::D



View Text Solution

Biomolecules

1. Haemoglobin in the example of

- A. simple protein
- B. derived protein
- C. fibrous protein
- D. conjugated protein

Answer: A::C::D



View Text Solution

2. Final hydrolysis product of simple protein is

- A. Carboxylic acid
- B. α -Amino acid

C. Mineral acid

D. Acetic acid

Answer: A::B::C::D



View Text Solution

3. Which of the following sugars can be used to prepare glucose on a large scale ?

A. Cellulose

B. Cane sugar

C. Galactose

D. Starch

Answer: A::C::D



View Text Solution

4. Which of the following is the example of disaccharide ?

A. Glucose

B. Raffinose

C. Cellulose

D. Sucrose

Answer: A::D



View Text Solution

5. Which of the following is not sugar ?

A. Sucrose

B. Starch

C. Fructose

D. Glucose

Answer: B::C



View Text Solution

6. The example of aldopentose is

A. arabinose

B. glucose

C. fructose

D. sucrose

Answer: A::B



View Text Solution

7. Milk sugar is

A. sucrose

B. lactose

C. maltose

D. glucose

Answer: A::B::C



Watch Video Solution

8. Night blindness is due to the deficiency of

A. vitamin A

B. vitamin B

C. vitamin C

D. vitamin D

Answer: A



View Text Solution

9. Insulin is a/an

A. hormone

B. antibiotic

C. antiseptic

D. vitamin

Answer: A



Watch Video Solution

10. In metabolic process the maximum energy is given by

A. carbohydrates

B. proteins

C. vitamins

D. fats

Answer: A::D



View Text Solution

11. Stachyose is

A. monosaccharides

B. disaccharides

C. trisaccharides

D. tetrasaccharides

Answer: A::C::D



Watch Video Solution

12. Inflammation of tongue is due to the deficiency of _____.

A. vitamin B_1

B. vitamin B_2

C. vitamin B_5

D. vitamin B_6

Answer: A::B



Watch Video Solution

Polymers

1. Which one of the following is a condensation polymer ?

A. Nylon

B. Polythene

C. PVC

D. Teflon

Answer: A



[View Text Solution](#)

2. Which of the following is a regenerated fibre?

A. Nylon-6

B. Terylene

C. Nylon-66

D. Acetate rayon

Answer: A::C::D



[View Text Solution](#)

3. Which one is the natural polyamide polymer ?

A. Cuprammonium silk

B. Wool

C. Perlon-L

D. Jute

Answer: B



View Text Solution

4. Which of the following is polyamide ?

A. Teflon

B. Nylon-6,6

C. Terylene

D. Bakelite

Answer: B



View Text Solution

5. Which one of the following is an addition polymer ?

A. Bakelite

B. Nylon-6,6

C. Polystyrene

D. Terylene

Answer: C



View Text Solution

6. Which of the following is a copolymer ?

A. Orlon

B. Teflon

C. PVC

D. PHBV

Answer: B::D



View Text Solution

7. Natural rubber is a polymer of

A. Styrene

B. Butadiene

C. Vinyl chloride

D. Isoprene

Answer: D



Watch Video Solution

8. Terylene is a

- A. vegetable fibre
- B. protein fibre
- C. polyester fibre
- D. polyamide fibre

Answer: B::C



Watch Video Solution

9. Thermosetting polymer is

A. Nylon-6

B. Nylon-6,6

C. Bakelite

D. SBR

Answer: A::B::C



View Text Solution

10. Nylon thread contains the polymer

A. polyamide

B. polyvinyl

C. Polyester

D. Polyethylene

Answer: A::D



View Text Solution

11. The Ziegler-Natta catalyst is used in the preparation of

A. LDPE

B. PHBV

C. PAN

D. HDPE

Answer: D



View Text Solution

Chemistry In Everyday Life

1. Which of the following is a bactericidal antibiotic ?

A. Erythromycin

B. Ofloxacin

C. Tetracycline

D. Chloramphenicol

Answer: A::B::C



Watch Video Solution

2. Which of the following is a common antacid ?

A. NaOH

B. KOH

C. $Mg(OH)_2$

D. HCl

Answer: B::C



View Text Solution

3. Biothional is

A. skin cleaning agent

B. analgesic

C. antibiotic

D. antacid

Answer: A::C



View Text Solution

4. A substance which can act both as an antiseptic and disinfectant is :

A. aspirin

B. chloroxylonol

C. bithional

D. phenol

Answer: D



[Watch Video Solution](#)

5. Valium is used as

A. tranquillizer

B. analgesic

C. antipyretic

D. antibiotic

Answer: A



[View Text Solution](#)

6. Food preservative in tomato ketchup is

- A. sodium acetate
- B. sodium benzoate
- C. sodium salicylate
- D. sodium propionate

Answer: A::B::D



View Text Solution

7. The drug used to induce sleep is

- A. paracetamol

B. bithional

C. chloroquine

D. equanil

Answer: A::D



View Text Solution

8. Iodex contains

A. methyl acetate

B. ethyl propionate

C. methyl salicylate

D. methyl benzoate

Answer: A::C



View Text Solution

9. Constituents of dettol are

A. terpineol and chloroxylenol

B. chloroamphenicol and terpineol

C. phenol and chloroxylenol

D. novestrol and equanil

Answer: A::C::D



View Text Solution

10. Equanil is

A. tranquillizer

B. antibiotic

C. analgesic

D. antacid

Answer: A



View Text Solution

