

Past Year MCQs

(10th Chemistry)

Unit 9 : Chemical Equilibrium

1. If $Q_c > K_c$, the reaction goes to: (2024-II)

- (A) Left to right
- (B) Right to left
- (C) In equilibrium
- (D) Reaction stops

Correct Answer: Right to left

2. For a reaction between PCl_3 and Cl_2 to form PCl_5 , the unit of K_c is: (2020-I, 2021-I, 2024-I)

- (A) mol dm^{-3}
- (B) mol dm^3
- (C) mol dm^{-2}
- (D) mol dm^4

Correct Answer: mol dm^{-3}

3. At dynamic equilibrium, the reaction can no longer be: (2023-II)

- (A) Reversed
- (B) The reaction stops
- (C) Reactants and products are equal
- (D) Forward and reverse reaction proceed equally

Correct Answer: Forward and reverse reaction proceed equally

4. The colour of iodine is: (2014-I, 2023-I)

- (A) Red
- (B) White
- (C) Blue
- (D) Purple

Correct Answer: Purple

5. K_c depends upon: (2022-II)

- (A) Atmosphere
- (B) Volume
- (C) Pressure
- (D) Temperature

Correct Answer: Temperature

6. Which gas is used to prepare ammonia? (2021-II)

- (A) H_2
- (B) N_2
- (C) O_2
- (D) Cl_2

Correct Answer: N_2 and H_2

7. The colour of hydrogen iodide (HI) is: (2020-II)

- (A) Red
- (B) Colourless
- (C) Green
- (D) Purple

Correct Answer: Colourless

8. If $Q_c < K_c$, what will be the direction of the reaction? (2013-I, 2017-I, 2018-II, 2019-I, 2020-II)

- (A) In no direction
- (B) Equilibrium state
- (C) Forward direction
- (D) Reverse direction

Correct Answer: Forward direction

9. The unit of molar concentration is: (2018-II)

- (A) mol dm^3
- (B) mol dm^{-3}
- (C) mol dm^2
- (D) None of these

Correct Answer: mol dm^{-3}

10. Reactions that have comparable amounts of reactants and products at equilibrium have: (2017-II, 2020-I)

- (A) Moderate K_c value
- (B) Very small K_c value
- (C) Very large K_c value
- (D) None of these

Correct Answer: Moderate K_c value

11. In a lime kiln, the reaction goes to completion because: (2015-II, 2019-II)

- (A) CaO is more stable than CaCO_3
- (B) CO_2 escapes continuously

(C) CaO is not dissociated

(D) None of these

Correct Answer: CO₂ escapes continuously

12. A reverse reaction is one in which: (2013-II, 2019-I)

(A) Reactants react gradually

(B) Which proceeds from products to reactants

(C) Which slows down

(D) Which speeds up

Correct Answer: Which proceeds from products to reactants

13. At the beginning, the rate of the reverse reaction is: (2018-II)

(A) Very fast

(B) Slow

(C) Moderate

(D) Negligible

Correct Answer: Negligible

14. If $Q_c = K_c$, the reaction is in: (2017-II, 2018-I, 2019-II, 2020-I, 2021-I)

(A) Forward direction

(B) Reverse direction

(C) Equilibrium

(D) Both sides

Correct Answer: Equilibrium

15. The unit of the equilibrium constant (K_c) for the reaction:

$N_2 + 3H_2 \rightleftharpoons 2NH_3$ (2018-II)

(A) mol dm⁻³

(B) mol dm³

(C) No unit

(D) None of these

Correct Answer: mol² dm⁻⁶

16. If $Q_c > K_c$, the reaction will proceed in: (2017-I)

(A) Forward direction

(B) Reverse direction

(C) Equilibrium

(D) None of these

Correct Answer: Reverse direction

17. A complete reaction is one in which: (2016-I, 2022-I)

- (A) All reactants are converted into products
- (B) Only 10% reactants convert into products
- (C) Half reactions convert into products
- (D) None of these

Correct Answer: All reactants are converted into products

18. Reactions that continue in both directions are called: (2016-I)

- (A) Irreversible
- (B) Reversible
- (C) Non-reactive
- (D) None of these

Correct Answer: Reversible

19. In the reaction $\text{N}_2 + 3\text{H}_2 \rightleftharpoons 2\text{NH}_3$, what will be present in the equilibrium mixture? (2015-II)

- (A) NH_3 only
- (B) N_2 and H_2 only
- (C) N_2 , H_2 , and NH_3
- (D) None of these

Correct Answer: N_2 , H_2 , and NH_3

20. K_e is always equal to: (2015-I)

- (A) R/R
- (B) K/K
- (C) K_c/K_p
- (D) None of these

Correct Answer: K_c/K_p

21. For the reaction $2\text{A} + \text{B} \rightleftharpoons 3\text{C}$, the equilibrium expression is: (2013-II, 2014-II)

- (A) $[\text{2A}][\text{B}] / [\text{3C}]$
- (B) $[\text{ABC}]$
- (C) $[\text{3C}] / [\text{2A}][\text{B}]$
- (D) None of these

Correct Answer: $[\text{3C}] / [\text{2A}][\text{B}]$

22. In the reaction $2\text{NO} \rightleftharpoons \text{N}_2\text{O}_2$, equilibrium mixture will contain: (2013-I)

- (A) NO only
- (B) NO_2 only
- (C) NO and NO_2

(D) None of these

Correct Answer: NO and NO₂

Unit 10: Acid, Bases and Salts

1. The chemical formula of nitric acid is: (2024-II)

(A) NaCl

(B) HCl

(C) HNO₃

(D) Covalent

Correct Answer: HNO₃

2. In the product of a Lewis acid-base reaction, the bond between the adduct species is:(2017-I, 2024-II)

(A) Ionic

(B) Coordinate covalent

(C) Metallic

(D) Covalent

Correct Answer: Coordinate covalent

3. The conjugate acid of HPO₄²⁻ is: (2024-I, 2015-I, 2017-II, 2023-I)

(A) H₂PO₄⁻

(B) PO₄³⁻

(C) H₃PO₄

(D) H₄PO₄

Correct Answer: H₃PO₄

4. Which of the following compounds is not a base?(2015-II, 2016-II, 2023-I, 2023-II)

(A) Calcium Oxide

(B) Aqueous Ammonia

(C) Sodium Chloride

(D) Sodium Carbonate

Correct Answer: Sodium Chloride

5. Which one of the following is a Lewis base? (2023-II)

(A) AlCl₃

(B) NH₃

(C) SO₃

(D) H₂O

Correct Answer: NH_3

6. Which ion is the conjugate base of sulfuric acid? (2022-II)

- (A) H_2SO_4
- (B) HSO_4^-
- (C) SO_4^{2-}
- (D) HSO_3^-

Correct Answer: HSO_4^-

7. Which one of the following species is amphoteric? (2013-I, 2022-I)

- (A) SO_4^{2-}
- (B) H_2O
- (C) $\text{Al}(\text{OH})_3$
- (D) NH_3

Correct Answer: $\text{Al}(\text{OH})_3$

8. Dilute acids react with carbonates to produce the given products except: (2013-II, 2022-II)

- (A) Hydrogen
- (B) Carbon dioxide
- (C) Water
- (D) CH_4

Correct Answer: Hydrogen

9. Which one of the following salts is used to dry a gas? (2013-I, 2014-I, 2015-I, 2018-I, 2020-I, 2020-II)

- (A) Na_2SiO_3
- (B) CaSO_4
- (C) NaCl
- (D) NH_4Cl

Correct Answer: CaSO_4

10. Which acid is used to cure the sting of wasps? (2014-I, 2021-I, 2023-II)

- (A) Acetic acid
- (B) Uric acid
- (C) Malic acid
- (D) Lactic acid

Correct Answer: Acetic acid

11. A reaction between an acid and a base produces: (2016-I, 2018-II, 2020-I)

- (A) Salt and base
- (B) Salt and water
- (C) Salt and gas
- (D) Salt and acid

Correct Answer: Salt and water

12. Lactic acid is present in: (2018-I)

- (A) Sour milk
- (B) Lemon
- (C) Orange
- (D) Apple

Correct Answer: Sour milk

13. Which acid is used in a storage battery? (2017-I)

- (A) Citric acid
- (B) Sulfuric acid
- (C) Uric acid
- (D) Formic acid

Correct Answer: Sulfuric acid

14. The sum of pH and pOH at 25°C is: (2014-II)

- (A) 7
- (B) 12
- (C) 14
- (D) 16

Correct Answer: 14

15. According to the Lewis concept, a species is called an acid if it can: (2013-II)

- (A) Give OH^- ions
- (B) Accept an electron pair
- (C) Donate an electron pair
- (D) Give H^+ ions

Correct Answer: Accept an electron pair

16. Which acid is used for etching designs on copper plates? (2013-II)

- (A) H_2SO_4
- (B) HNO_3
- (C) HCl

(D) HBr

Correct Answer: HNO_3

17. If the pH of a solution is less than 7, it will be: (2019-I, 2019-II)

(A) Neutral

(B) A base

(C) An alkali

(D) An acid

Correct Answer: An acid

18. The water of crystallization is responsible for the: (2019-II)

(A) Melting points of crystals

(B) Boiling points of crystals

(C) Transition point of crystals

(D) Shape of crystals

Correct Answer: Shape of crystals

19. Which acid causes acidity in the stomach? (2017-II)

(A) Citric acid

(B) Oxalic acid

(C) Hydrochloric acid

(D) Nitric acid

Correct Answer: Hydrochloric acid

20. Potassium Ferrocyanide [$\text{K}_4\text{Fe}(\text{CN})_6$] is a: (2016-I)

(A) Normal salt

(B) Acidic salt

(C) Complex salt

(D) Double salt

Correct Answer: Complex salt

21. Which one of the following is an acidic salt? (2016-II)

(A) NaCl

(B) KHSO_4

(C) $\text{Ca}(\text{ClO})_2$

(D) $\text{Al}(\text{OH})_3$

Correct Answer: KHSO_4

22. If any liquid has pH = 7, it will be: (2019-II)

- (A) A base
- (B) An acid
- (C) A neutral solution
- (D) A salt solution

Correct Answer: A neutral solution

Unit 11: Organic Chemistry

1. A coal having 70% carbon is:(2024-II)

- (A) Peat
- (B) Lignite
- (C) Bituminous
- (D) Anthracite

Correct Answer: Bituminous

2. Coal having 90% carbon contents is called: (2023-II, 2024-I)

- (A) Peat
- (B) Lignite
- (C) Bituminous
- (D) Anthracite

Correct Answer: Anthracite

3. The main component of natural gas is: (2015-II, 2016-I, 2022-II, 2023-I)

- (A) Methane
- (B) Propane
- (C) Butane
- (D) Propyne

Correct Answer: Methane

4. The functional group -COOH is found in: (2021-I, 2022-II)

- (A) Carboxylic acid
- (B) Aldehydes
- (C) Alcohols
- (D) Esters

Correct Answer: Carboxylic acid

5. An example of a heterocyclic compound is: (2022-I)

- (A) Pyridine
- (B) Benzene

- (C) Hexane
- (D) Cyclohexane

Correct Answer: Pyridine

6. The formula of the ethyl radical is: (2021-II)

- (A) C_2H_5^-
- (B) C_3H_7^-
- (C) CH_3^-
- (D) C_3H_6^-

Correct Answer: C_2H_5^-

7. The ability of carbon atoms to form chains is called: (2014-I, 2020-I, 2020-II)

- (A) Isomerism
- (B) Catenation
- (C) Resonance
- (D) Condensation

Correct Answer: Catenation

8. Pitch is the black residue of: (2019-II)

- (A) Coal gas
- (B) Coke
- (C) Coal tar
- (D) Coal

Correct Answer: Coal tar

9. Wood contains carbon about: (2019-I)

- (A) 40%
- (B) 50%
- (C) 60%
- (D) 70%

Correct Answer: 50%

10. In the laboratory, urea was prepared for the first time by:(2017-I, 2018-II)

- (A) Wohler
- (B) Rutherford
- (C) Berzelius
- (D) Dalton

Correct Answer: Wohler

11. Which one of the following is not fossil fuel? (2015-I, 2018-I)

- (A) Coal
- (B) Natural gas
- (C) Petroleum
- (D) Biogas

Correct Answer: Biogas

12. The molecular formula of Decane is: (2017-II)

- (A) $C_{10}H_{22}$
- (B) $C_{10}H_{30}$
- (C) $C_{10}H_{18}$
- (D) $C_{10}H_{21}$

Correct Answer: $C_{10}H_{22}$

13. How many percent of natural gas consists of methane (CH_4)? (2014-II)

- (A) 85%
- (B) 84%
- (C) 83%
- (D) 82%

Correct Answer: 85%

14. The carbon content in peat is:(2013-II)

- (A) 60%
- (B) 70%
- (C) 80%
- (D) 90%

Correct Answer: 60%

15. The formula of pentane is:(2014-II)

- (A) C_5H_{12}
- (B) C_5H_{10}
- (C) C_5H_8
- (D) C_5H_{14}

Correct Answer: C_5H_{12}

16. When one hydrogen atom is removed from an alkane, it gives: (2013-I)

- (A) Ethene
- (B) Alkynes
- (C) Alkyl radical

(D) Aromatic compound
Correct Answer: Alkyl radical

Unit 12: Hydrocarbons

1. The general formula of alkenes is:(2024-II)

- (A) C_nH_{2n+2}
- (B) C_nH_{2n}
- (C) C_nH_{2n-2}
- (D) C_nH_{2n-1}

Correct Answer: C_nH_{2n}

2. Which hydrocarbon molecules will not affect the aqueous bromine solution? (2013-I, 2024-I)

- (A) CH_4
- (B) C_2H_4
- (C) C_2H_2
- (D) C_5H_{10}

Correct Answer: CH_4

3. The order of reactivity of hydrogen halides with alkenes is:(2023-II)

- (A) $HBr < HCl$
- (B) $HI > HBr$
- (C) $HBr > HI$
- (D) $HCl > HBr$

Correct Answer: $HCl > HBr$

4. The oxidation of alkenes produces: (2016-II, 2017-II, 2023-I)

- (A) Formic acid
- (B) Glyoxal
- (C) Glycol
- (D) Oxalic acid

Correct Answer: Glycol

5. Dehydration of alcohols can be carried out with: (2018-II, 2019-II, 2022-II)

- (A) $NaOH$
- (B) KOH
- (C) H_2SO_4
- (D) HCl

Correct Answer: H_2SO_4

6. Which one of these is a saturated hydrocarbon? (2014-I, 2020-II, 2022-I)

- (A) C_2H_4
- (B) C_3H_6
- (C) C_4H_8
- (D) C_5H_{12}

Correct Answer: C_5H_{12}

7. Which one of the following is a synthetic fibre? (2022-I)

- (A) Cotton
- (B) Silk
- (C) Wool
- (D) Nylon

Correct Answer: Nylon

8. The formula of butyne is: (2021-II)

- (A) C_4H_8
- (B) C_4H_6
- (C) C_4H_{10}
- (D) C_4H_{12}

Correct Answer: C_4H_6

9. Substitution reaction is the characteristic of: (2021-II)

- (A) Alkanes
- (B) Alkenes
- (C) Alkynes
- (D) None of these

Correct Answer: Alkanes

10. Alkenes are prepared from alcohols by a process called: (2016-I, 2021-I)

- (A) Dehydrogenation
- (B) Dehydrohalogenation
- (C) Dehalogenation
- (D) Dehydration

Correct Answer: Dehydration

11. The reduction of alkyl halides takes place in the presence of: (2015-II, 2019-I, 2020-I, 2021-I)

- (A) Zn/HCl
- (B) Na/HCl
- (C) Mg/HCl

(D) Cu/HCl

Correct Answer: Zn/HCl

12. Which one is also called Olefins? (2018-I)

(A) Alcohols

(B) Alkanes

(C) Alkynes

(D) Alkenes

Correct Answer: Alkenes

13. The general formula of saturated hydrocarbons (Alkanes) is:(2015-I, 2017-I)

(A) C_nH_{2n}

(B) C_nH_{2n-2}

(C) C_nH_{2n+2}

(D) C_nH_{2n-1}

Correct Answer: C_nH_{2n+2}

14. Marsh gas consists of: (2013-II)

(A) Methane

(B) Ethane

(C) Butane

(D) Propane

Correct Answer: Methane

15. A hydrocarbon has molecular formula C_8H_{14} . What is the molecular formula of the next member of the same homologous series? (2013-II)

(A) C_9H_{16}

(B) $C_{10}H_{18}$

(C) $C_{11}H_{20}$

(D) $C_{12}H_{22}$

Correct Answer: $C_{10}H_{18}$

16. It is used to prepare Mustard gas: (2013-I)

(A) Ethene

(B) Propane

(C) Butane

(D) Alcohol

Correct Answer: Ethene

Unit 13: Biochemistry

1. The source of galactose is: (2022-I, 2024-II)

- (A) Cereals
- (B) Fruits
- (C) Rice
- (D) Cotton

Correct Answer: Fruits

2. Thousands of amino acids polymerize to form: (2022-I, 2024-II)

- (A) Carbohydrates
- (B) Vitamins
- (C) Proteins
- (D) Lipids

Correct Answer: Proteins

3. Which of the following is a disaccharide? (2015-II, 2020-II, 2024-I)

- (A) Glucose
- (B) Fructose
- (C) Sucrose
- (D) Starch

Correct Answer: Sucrose

4. Which of the following is a tasteless compound? (2014-I, 2017-I, 2020-I, 2021-II, 2024-I)

- (A) Starch
- (B) Sucrose
- (C) Fructose
- (D) Glucose

Correct Answer: Starch

5. Which one of the following is a reducing sugar? (2023-II)

- (A) Glucose
- (B) Maltose
- (C) Sucrose
- (D) Starch

Correct Answer: Glucose

6. The organic compounds used as drugs to control bleeding are:(2013-II, 2023-I)

- (A) Vitamins

- (B) Proteins
- (C) Lipids
- (D) Glycerides

Correct Answer: Vitamins

7. Photosynthesis process produces: (2015-I, 2020-I, 2020-II, 2022-II)

- (A) Glucose
- (B) Starch
- (C) Cellulose
- (D) Sucrose

Correct Answer: Glucose

8. Glucose is: (2013-II, 2021-I)

- (A) Hexahydroxy aldehyde
- (B) Hexahydroxy ketone
- (C) Pentahydroxy aldehyde
- (D) Pentahydroxy ketone

Correct Answer: Hexahydroxy aldehyde

9. The most important oligosaccharide is: (2019-II)

- (A) Maltose
- (B) Sucrose
- (C) Glucose
- (D) Fructose

Correct Answer: Maltose

10. The chemical formula of Palmitic acid is: (2019-I)

- (A) $C_{16}H_{34}COOH$
- (B) $C_{17}H_{36}COOH$
- (C) $C_{16}H_{32}COOH$
- (D) $C_{16}H_{30}COOH$

Correct Answer: $C_{16}H_{34}COOH$

11. Which vitamin is fat-soluble?(2019-I)

- (A) Vitamin B
- (B) Vitamin C
- (C) Vitamin K
- (D) Vitamin D

Correct Answer: Vitamin K

12. Which one of the following is a fat-soluble vitamin? (2014-I, 2016-I, 2016-II, 2018-II)

- (A) Vitamin A
- (B) Vitamin E
- (C) Vitamin K
- (D) All of these

Correct Answer: All of these

13. The general formula of carbohydrates is: (2013-I, 2018-II)

- (A) $C_n(H_2O)_n$
- (B) $Ca(H_2O)$
- (C) $C(H_2O_2)$
- (D) $C_n(H_3O)$

Correct Answer: $C_n(H_2O)_n$

14. Night blindness is caused by a deficiency of: (2017-I, 2017-II, 2018-I)

- (A) Vitamin A
- (B) Vitamin E
- (C) Vitamin C
- (D) Vitamin D

Correct Answer: Vitamin A

15. When glucose and fructose combine, they produce: (2018-I)

- (A) Starch
- (B) Cellulose
- (C) Sucrose
- (D) None of these

Correct Answer: Sucrose

16. The formula of Stearic acid is:(2017-II)

- (A) $C_{18}H_{36}COOH$
- (B) C_4H_8COOH
- (C) $C_{16}H_{32}COOH$
- (D) $C_{18}H_{30}COOH$

Correct Answer: $C_{18}H_{36}COOH$

17. Which of the following is a triglyceride? (2015-I, 2016-II)

- (A) Carbohydrates
- (B) Proteins
- (C) Lipids

(D) Vitamins

Correct Answer: Lipids

18. Which one of the following does not contain starch? (2016-II)

(A) Sugarcane

(B) Barley

(C) Maize

(D) Potatoes

Correct Answer: Sugarcane

19. Which one of the following vitamins is water-soluble? (2015-II)

(A) Vitamin A

(B) Vitamin C

(C) Vitamin D

(D) Vitamin E

Correct Answer: Vitamin C

20. Eye inflammation is caused by a deficiency of: (2014-II)

(A) Vitamin A

(B) Vitamin B

(C) Vitamin C

(D) Vitamin D

Correct Answer: Vitamin B

21. The building blocks of lipids are:(2013-I)

(A) Alcohols

(B) Fatty acids

(C) Carboxylic acids

(D) Mineral acids

Correct Answer: Fatty acids

Unit 14: Environmental Chemistry-I Atmosphere

1. Identify the molecule produced when electrical discharges pass through oxygen in air. (FBISE 2019)

(A) O_2

(B) O_3

(C) CO_2

(D) NO_2

Correct Answer: O_3 (Ozone)

2. Which of the following causes brain damage in children? (FBISE 2018)

- (A) Carbon monoxide
- (B) Sulfur dioxide
- (C) Lead compounds
- (D) Methane

Correct Answer: Lead compounds

3. Which of the following layers contains ozone gas? (FBISE 2018)

- (A) Troposphere
- (B) Stratosphere
- (C) Mesosphere
- (D) Thermosphere

Correct Answer: Stratosphere

4. The burning of fossil fuels leads to: (2017)

- (A) Acid rain
- (B) Ozone depletion
- (C) Global warming
- (D) All of these

Correct Answer: All of these

5. Most air pollution in cities is caused by:(2018)

- (A) Power plants
- (B) Vehicles
- (C) Forest fires
- (D) Agriculture

Correct Answer: Vehicles

6. Ultraviolet radiations are absorbed by ozone in the stratosphere, that is why:

- (A) Temperature of stratosphere increases
- (B) Temperature of stratosphere decreases
- (C) Ozone layer is destroyed
- (D) Ozone holes are formed

Correct Answer: Temperature of stratosphere increases

7. Marble buildings and statues are destroyed by acid rain due to the reaction of sulfuric acid with:(FBISE 2017)

- (A) CaCO_3
- (B) $\text{Ca}(\text{NO}_3)_2$
- (C) CO_2

(D) NaCl

Correct Answer: CaCO_3 (Calcium carbonate)

8. The emission of CO , NO_x , and unburned hydrocarbons can be reduced by using:

(A) Greenhouse

(B) Incinerators

(C) Catalytic converters

(D) Nuclear reactors

Correct Answer: Catalytic converters

9. Which gas has the lowest percentage in air? (FBISE 2017)

(A) Oxygen

(B) Nitrogen

(C) Argon

(D) Hydrogen

Correct Answer: Hydrogen

10. Which is a reddish-brown gas? (FBISE 2016)

(A) Hydrogen

(B) Carbon dioxide

(C) Nitrogen dioxide (NO_2)

(D) Sulfur dioxide

Correct Answer: Nitrogen dioxide (NO_2)

11. Ultraviolet radiation in the stratosphere causes:(2017)

(A) Ozone formation

(B) Ozone depletion

(C) Acid rain

(D) Greenhouse effect

Correct Answer: Ozone formation

12. The lowest temperature in the stratosphere is observed at:(2015)

(A) 0°C

(B) -50°C

(C) -70°C

(D) -100°C

Correct Answer: -70°C

13. Which of the following causes breathing difficulties, asthma, and eye irritation? (FBISE 2015)

- (A) Carbon monoxide
- (B) Methane
- (C) CFCs
- (D) Ozone

Correct Answer: Ozone

14. Which one is NOT an air pollutant? (FBISE 2015)

- (A) CO₂
- (B) SO₂
- (C) Nitrogen (N₂)
- (D) NO₂

Correct Answer: Nitrogen (N₂)

15. Acid rain has a pH less than: (FBISE 2014)

- (A) 5.6
- (B) 7.0
- (C) 8.5
- (D) 9.5

Correct Answer: 5.6

16. Which reagent is used for dehydrogenation? (FBISE 2015)

- (A) Bromine water
- (B) Alcoholic KOH
- (C) H₂SO₄
- (D) NaOH

Correct Answer: (B) Alcoholic KOH

17. Hydrogen is added to propene according to the following equation:



- (A) Ni (Nickel)
- (B) Pt (Platinum)
- (C) Pd (Palladium)
- (D) Fe (Iron)

Correct Answer: (A) Ni (Nickel)

18. Which coloured solution is produced when ketones are mixed with alkaline sodium nitroprusside solution? (FBISE 2014)

- (A) Red

(B) Yellow

(C) Blue

(D) Purple

Correct Answer: (D) Purple

19. What percentage of alkaline potassium permanganate (KMnO_4) solution is used to detect the presence of an alkene? (FBISE 2014)

(A) 0.001%

(B) 0.01%

(C) 0.1%

(D) 1%

Correct Answer: (B) 0.01%

20. Which process produces ethanol? (FBISE 2014)

(A) Hydrogenation

(B) Hydration

(C) Decarboxylation

(D) Combustion

Correct Answer: (B) Hydration

Unit 15: Environmental Chemistry-II Water

1. Which of the following is responsible for acid rain? (FBISE 2018)

(A) CO_2

(B) SO_2

(C) N_2

(D) O_3

Correct Answer: (B) SO_2

2. Which of the following is NOT a waterborne disease? (FBISE 2018, 2017)

(A) Dysentery

(B) Hepatitis A

(C) Typhoid

(D) Anemia

Correct Answer: (D) Anemia

3. Ice floats over liquid water because: (FBISE 2017)

(A) The volume of ice is less than water

(B) The density of ice is less than water

(C) Its mass is less than water

(D) The temperature of ice is less than water

Correct Answer: (B) The density of ice is less than water

4. When boiling temporary hard water, the substance that forms is: (FBISE 2017)

- (A) $\text{Ca}(\text{HCO}_3)_2$
- (B) CaCO_3
- (C) MgCO_3
- (D) Na_2CO_3

Correct Answer: (B) CaCO_3

5. Which human activity results in water contamination? (FBISE 2010)

- (A) Livestock waste
- (B) Pesticides
- (C) Industrial waste
- (D) All of these

Correct Answer: (D) All of these

6. Which of the following salts causes temporary hardness in water? (FBISE 2015)

- (A) Magnesium hydrogen carbonate
- (B) Calcium sulfate
- (C) Magnesium sulfate
- (D) Both (B) and (C)

Correct Answer: (A) Magnesium hydrogen carbonate

7. What is the chemical formula of gypsum? (FBISE 2015)

- (A) MgSO_4
- (B) $\text{CaSO}_4 \cdot 2\text{H}_2\text{O}$
- (C) CaCO_3
- (D) Na_2SO_4

Correct Answer: (B) $\text{CaSO}_4 \cdot 2\text{H}_2\text{O}$

8. The density of water is maximum at: (FBISE 2018)

- (A) 0°C
- (B) 4°C
- (C) 10°C
- (D) 25°C

Correct Answer: (B) 4°C

9. Which of the following is insoluble in water? (FBISE 2015)

- (A) NaCl

(B) MgSO_4

(C) Fe

(D) Na_2CO_3

Correct Answer: (C) Fe

10. Which of the following is used to remove permanent hardness in water?

(FBISE 2010)

(A) Boiling water

(B) Clark's method

(C) Sodium carbonate

(D) Ion exchange method

Correct Answer: (D) Ion exchange method

Unit 16: Chemical Industries

1. The chemical formula of ammonium carbamate is: (FBISE 2019)

(A) NH_4NO_3

(B) NH_4HCO_3

(C) $\text{NH}_2\text{COONH}_4$

(D) $(\text{NH}_4)_2\text{CO}_3$

Correct Answer: (C) $\text{NH}_2\text{COONH}_4$

2. Which of the following processes is reducing in nature? (FBISE 2019)

(A) Roasting

(B) Smelting

(C) Floatation

(D) Grinding

Correct Answer: (B) Smelting

3. The percentage of nitrogen in urea is: (FBISE 2019)

(A) 35%

(B) 21.2%

(C) 46.6%

(D) 40%

Correct Answer: (C) 46.6%

4. Which of the following metals is extracted from bauxite ore? (FBISE 2019)

(A) Copper

(B) Zinc

(C) Sodium

(D) Aluminum

Correct Answer: (D) Aluminum

5. Which of the following is used as jet fuel? (FBISE 2018)

- (A) Diesel
- (B) Kerosene oil
- (C) Fuel oil
- (D) Lubricating oil

Correct Answer: (B) Kerosene oil

6. Which of the following is used as a raw material for the Solvay process? (FBISE 2018)

- (A) CH_4 and CO
- (B) NH_3 and K_2SO_4
- (C) CO_2 and Ca(OH)_2
- (D) C_2H_6 and CH_4

Correct Answer: (C) CO_2 and Ca(OH)_2

7. Which of the following is an ore of aluminum? (FBISE 2017)

- (A) Haematite
- (B) Magnetite
- (C) Bauxite
- (D) Halite

Correct Answer: (C) Bauxite

8. What happens when ammonium carbamate is distilled with steam? (FBISE 2016)

- (A) Ammonia is produced
- (B) Urea solution is produced
- (C) Carbon dioxide is produced
- (D) Ammonium hydroxide is produced

Correct Answer: (B) Urea solution is produced

9. Chalcocite is the ore of which metal? (FBISE 2016)

- (A) Chromium
- (B) Aluminum
- (C) Copper
- (D) Iron

Correct Answer: (C) Copper

10. The separation of minerals from gangue is called concentration. Which of the following methods is used for concentration? (FBISE 2015)

- (A) Roasting
- (B) Smelting
- (C) Floatation
- (D) Grinding

Correct Answer: (C) Floatation

11. What is the chemical formula of haematite? (FBISE 2015)

- (A) Fe_2O_3
- (B) Fe_3O_4
- (C) FeS_2
- (D) FeCO_3

Correct Answer: (A) Fe_2O_3

12. What is the percentage of nitrogen in ammonium sulfate (FBISE 2014)

- (A) 36%
- (B) 45.6%
- (C) 21.2%
- (D) 40%

Correct Answer: (C) 21.2%

13. The chemical formula of Galena (an ore of lead) is: (FBISE 2014)

- (A) PbS
- (B) CuFeS_2
- (C) Fe_2O_3
- (D) Al_2O_3

Correct Answer: (A) PbS