

# 10<sup>th</sup> Grade Sargodha Board

## Chemistry

2019

### Group A

#### MCQ SECTION

i)  $K_c$  is equal to:

(Mark 1)

A.  $K_f/K_r$

B.  $K_r/K_f$

C.  $R_f/R_r$

D.  $R_r/R_f$

Answer:

A.  $K_f/K_r$

ii) When the magnitude of  $K_c$  is very small it indicates:

(Mark 1)

A. Equilibrium will never establish

B. All reactants will be converted to products

C. Reactions will go to completion

D. The amount of products is negligible

Answer:

A. Equilibrium will never establish

iii) Which one of the following salt will use to dry a gas.

(Mark 1)

A.  $\text{Na}_2\text{CO}_3$

B.  $\text{NaCl}$

C.  $\text{CaO}$

D.  $\text{Na}_2\text{SiO}_3$

Answer:

C.  $\text{CaO}$

iv)  $\text{KCl}$  is an example of:

(Mark 1)

A. Normal Salt

B. Double Salt

C. Mixed Salt

D. Complex Salt

Answer:

A. Normal Salt

v) Amount of carbon in lignite coal is:

(Mark 1)

A. 60%

B. 70%

C. 80%

D. 90%

Answer:

B. 70%

vi) Incomplete combustion of alkanes produces. (Mark 1)

- A. Carbon dioxide only
- B. Carbon monoxide only
- C. Carbon monoxide and carbon black
- D. Carbon dioxide and carbon black

Answer:

B. Carbon monoxide only

vii) Which one of the following is tasteless? (Mark 1)

- A. Starch
- B. Glucose
- C. Fructose
- D. Sucrose

Answer:

A. Starch

viii) Who proposed the name of vitamins? (Mark 1)

- A. Lewis
- B. J. Watson
- C. F. Crick
- D. Funk

Answer:

D. Funk

ix) Depending upon temperature variation, atmosphere is divided into how many regions? (Mark 1)

- A. One
- B. Two
- C. Three
- D. Four

Answer:

D. Four

x) Which one of the following gas is used to destroy harmful bacteria in water? (Mark 1)

- A. Fluorine
- B. Chlorine
- C. Bromine
- D. Iodine

Answer:

B. Chlorine

xi) Maximum density of water at 4°C is: (Mark 1)

- A. 1 gcm<sup>-3</sup>
- B. 2 gcm<sup>-3</sup>
- C. 3 gcm<sup>-3</sup>
- D. 4 gcm<sup>-3</sup>

Answer:

A. 1 gcm<sup>-3</sup>

xii) Crude oil is heated in the furnace upto: (Mark 1)

A. 300°C

B. 350°C

C. 400°C

D. 450°C

Answer:

C. 400°C

## SHORT QUESTION SECTION

### Section-B Q.2

- Q.2 i) Define reversible reaction and give one example. (Marks 2)
- Q.2 ii) In which direction reaction will proceed if  $Q_c < K_c$ ? (Marks 2)
- Q.2 iii) Write two Macroscopic characteristics of forward reaction. (Marks 2)
- Q.2 iv) Define "Chemical equilibrium state". (Marks 2)
- Q.2 v) What are mixed salts? Give example. (Marks 2)
- Q.2 vi) Give Bronsted Lowry concept of Acids and Bases. (Marks 2)
- Q.2 vii) Write two uses of calcium chloride. (Marks 2)
- Q.2 viii) Which Salt is used to make "Plaster of Paris" Give formula. (Marks 2)

### Section-B Q.3

- Q.3 i) What is meant by catenation? Give an example of a compound that displays catenation. (Marks 2)
- Q.3 ii) Define functional group with an example. (Marks 2)
- Q.3 iii) Write the structural formulae of each of the following: (Marks 2) Q.3 iv) Differentiate between saturated and unsaturated hydrocarbons. (Marks 2)
- Q.3 v) Write one use of each acetylene and chloroform. (Marks 2)
- Q.3 vi) Write the structural formula of fructose. (Marks 2)
- Q.3 vii) What are four fat-soluble vitamins? (Marks 2)
- Q.3 viii) Write a source and a use of vitamin A. (Marks 2)

### Section-B Q.4

- Q.4 i) Write the percentage composition of dry air by volume. (Marks 2)
- Q.4 ii) Give two effects of ozone depletion. (Marks 2)
- Q.4 iii) State the major sources of CO and CO<sub>2</sub> emission. (Marks 2)
- Q.4 iv) Define Scum. (Marks 2)
- Q.4 v) Write four uses of water. (Marks 2)
- Q.4 vi) Give Gravity Separation and Froth flotation Process. (Marks 2)
- Q.4 vii) How are slag and matte removed from blast furnace. (Marks 2)
- Q.4 viii) Define Calcination. Give equation. (Marks 2)

## LONG QUESTION SECTION

**Q.5 a) State the Law of Mass Action and derive equilibrium constant expression for a general reaction. (Marks 5)**

**Q.5 b) Write down four uses of bases. (Marks 4)**

**Q.6 a) Write down four sources of Alkanes. (Marks 5)**

**Q.6 b) Write down four uses of lipids. (Marks 4)**

**Q.7 a) How crude oil is refined? Explain two important fractions of petroleum along with their uses. (Marks 5)**

**Q.7 b) Explain four important waterborne diseases. (Marks 4)**

# 10<sup>th</sup> Grade Sargodha Board

## Chemistry

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### Group B

#### MCQ SECTION

i) For a reaction between  $\text{PCl}_3$  and  $\text{Cl}_2$  to form  $\text{PCl}_5$ , the units of  $K_c$  is:

Mark 1)

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

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

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

D.  $\text{mol dm}^3$

Answer:

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

ii) The value of  $K_c$  depends upon:

(Mark 1)

A. Pressure

B. Volume

C. Temperature

D. Density

Answer:

C. Temperature

iii) Which ion is the conjugate base of sulphuric acid?

(Mark 1)

A.  $\text{SO}_4^{2-}$

B.  $\text{S}^{2-}$

C.  $\text{HSO}_3^-$

D.  $\text{HSO}_4^-$

Answer:

D.  $\text{HSO}_4^-$

iv) Lactic acid is found in:

(Mark 1)

A. Sour milk

B. Apple

C. Grapes

D. Lemon

Answer:

A. Sour milk

v) Which of the following is the hardest coal?

(Mark 1)

A. Peat

B. Lignite

C. Bituminous

D. Anthracite

Answer:

D. Anthracite

vi) Which one of these is a saturated hydrocarbon?

(Mark 1)

A.  $C_2H_4$

B.  $C_3H_6$

C.  $C_4H_8$

D.  $C_5H_{12}$

Answer:

D.  $C_5H_{12}$

vii) Which one of the following is a triglyceride?

(Mark 1)

A. Carbohydrates

B. Proteins

C. Lipids

D. Vitamins

Answer:

C. Lipids

viii) Night blindness is because of deficiency of:

(Mark 1)

A. Vitamin A

B. Vitamin E

C. Vitamin C

D. Vitamin D

Answer:

A. Vitamin A

ix) Just above the Earth's surface is:

(Mark 1)

A. Stratosphere

B. Mesosphere

C. Troposphere

D. Thermosphere

Answer:

C. Troposphere

x) Temporary hardness is because of:

(Mark 1)

A.  $Ca(HCO_3)_2$

B.  $CaCO_3$

C.  $MgCO_3$

D.  $MgSO_4$

Answer:

A.  $Ca(HCO_3)_2$

xi) At which temperature density of water is maximum?

(Mark 1)

A.  $0^\circ C$

B.  $4^\circ C$

C.  $100^\circ C$

D.  $120^\circ C$

Answer:

B.  $4^\circ C$

xii) Concentration is a:

(Mark 1)

- A. Mixing technique
- B. Separating technique
- C. Boiling technique
- D. Cooling technique

Answer:

- B. Separating technique



## SHORT QUESTION SECTION

### Section-B Q.2

Q.2 i) Write two macroscopic characteristics of reverse reaction.

(Marks 2)

Q.2 ii) How dynamic equilibrium is established?

(Marks 2)

Q.2 iii) Differentiate between reactants and products.

(Marks 2)

Q.2 iv) How is active mass represented? Write its units

(Marks 2)

Q.2 v) Which kind of bond is formed between Lewis acid and base. Give example.

(Marks 2)

Q.2 vi) Write down formulas of the following:

(Marks 2)

a) Nitric acid

b) Phosphoric acid

c) Calcium Hydroxide

d) Aluminium Hydroxide

Q.2 vii) Describe Bronsted Lowry concept of acids and bases. (Marks 2)

Q.2 viii) Write down two uses of sodium chloride.

(Marks 2)

### Section-B Q.3

Q.3 i) Write the general formula of alkanes and alkyl radical.

(Marks 2)

Q.3 ii) Write one use of each of bituminous and anthracite.

(Marks 2)

Q.3 iii) Write percentage of carbon in peat and lignite.

(Marks 2)

Q.3 iv) Write the structural formulae of the following.

(Marks 2)

a) Glyoxal

b) Oxalic acid

Q.3 v) Write two uses of ethene.

(Marks 2)

Q.3 vi) Why rancid butter has a foul smell?

(Marks 2)

Q.3 viii) Write formulae of Palmitic acid and stearic acid.

(Marks 2)

### Section-B Q.4

Q.4 i) Write names of four natural systems of our earth.

(Marks 2)

Q.4 ii) Write two sources of oxides of carbon.

(Marks 2)

Q.4 iii) Define ozone and ozone layer.

(Marks 2)

Q.4 iv) Define hard water and soft water.

(Marks 2)

Q.4 v) Mention the disadvantages of detergents.

(Marks 2)

Q.4 vi) Give Formulae of chalcopyrite and copper glance.

(Marks 2)

Q.4 vii) Write Raw materials of Solvay's Process.

(Marks 2)

Q.4 viii) How is "CO<sub>2</sub>" prepared in Solvay's Process.

(Marks 2)

## LONG QUESTION SECTION

**Q.5 a) Write down Macroscopic characteristics of dynamic equilibrium.**

**(Marks 5)**

**Q.5 b) What is a salt. Give preparation of soluble salts in detail.**

**(Marks 4)**

**Q.6 a) Write down five uses of ethene.**

**(Marks 5)**

**Q.6 b) Write down sources and uses of protein.**

**(Marks 4)**

**Q.7 a) Write a note on fractional distillation of petroleum.**

**(Marks 5)**

**Q.7 b) Explain the methods of removing permanent hardness.**

**(Marks 4)**