

**NOTE:** Four possible answers A, B, C and D to each question are given. The choice which you think is correct, fill that circle in front of that question with Marker or Pen ink. Cutting or filling two or more circles will result in zero mark in that question.

Q1.

12

1. The unit of molar concentration is:

- (A)  $\text{mol dm}^{-3}$       (B)  $\text{mol dm}^{-2}$       (C)  $\text{mol dm}^{-1}$       (D)  $\text{mol}^{-1} \text{dm}^{-1}$

2. A reverse reaction is one:

- (A) Which proceeds from left to right      (B) In which reactants react to form product  
(C) Which slows down gradually      (D) Which speeds up gradually

3. Lactic acid is found in:

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

4. The water of crystallization is responsible for the:

- (A) Melting points of crystals      (B) Boiling points of crystals  
(C) Shapes of crystals      (D) Transition point of crystals

5. Wood contains carbon about:

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

6. The reduction of alkyl halides takes place in the presence of:

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

7. Which vitamin is fat soluble:

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

8. Formula of palmitic acid is:

- (A)  $\text{C}_{17}\text{H}_{35}\text{COOH}$       (B)  $\text{C}_{15}\text{H}_{32}\text{COOH}$       (C)  $\text{C}_{15}\text{H}_{31}\text{COOH}$       (D)  $\text{C}_{16}\text{H}_{31}\text{COOH}$

9. Which is secondary pollutant:

- (A)  $\text{H}_2\text{SO}_4$       (B)  $\text{CO}_2$       (C) CO      (D)  $\text{SO}_3$

10. Which one of the following salts makes the water permanently hard:

- (A)  $\text{NaHCO}_3$       (B)  $\text{Na}_2\text{CO}_3$       (C)  $\text{Ca}(\text{HCO}_3)_2$       (D)  $\text{CaSO}_4$

11. Which one of the following disease causes severe diarrhea and can be fatal:

- (A) Typhoid      (B) Dysentery      (C) Cholera      (D) Jaundice

12. Which one of the following is not a fraction of petroleum:

- (A) Petrol      (B) Alcohol      (C) Diesel oil      (D) Kerosene oil

Roll No.(in Figures): ..... (in Words): .....

Maximum Marks: 48

**SUBJECTIVE TYPE**

Time Allowed :1.45 Hours

**(PART - I)**

**Q2. Write short answers to any FIVE (5) questions.** 5×2=10

- (i) What is meant by the term "Chemical equilibrium state"?
- (ii) Define irreversible reaction, give an example.
- (iii) What do you mean by the extent of reaction?
- (iv) Write down two macroscopic characteristics of forward reaction.
- (v) Why  $H^+$  ion acts as a Lewis acid?
- (vi) Define pH. What is the pH of pure water?
- (vii) Write the name and formulae of two mineral acids.
- (viii) Differentiate between conjugate acid and conjugate base.

**Q3. Write short answers to any FIVE (5) questions.** 5×2=10

- (i) What is meant by isomerism?
- (ii) What is an ester group? Write down the formula of ethyl acetate.
- (iii) Write any two uses of organic compounds.
- (iv) Why are the alkenes called olefins?
- (v) Differentiate between saturated and unsaturated hydrocarbons.
- (vi) Write two characteristics of monosaccharides.
- (vii) Write two points of importance of vitamins.
- (viii) What is the function of DNA?

**Q4. Write short answers to any FIVE (5) questions.** 5×2=10

- (i) Write down the name of stratosphere's regions.
- (ii) Write down two effects of  $SO_2$ .
- (iii) Differentiate between primary and secondary air pollutants.
- (iv) What is jaundice? Give its symptoms.
- (v) Write down two properties of water.
- (vi) What is meant by minerals?
- (vii) How is ammonia prepared for the synthesis of urea?
- (viii) Write down the two uses of petroleum ether.

**(PART - II)**

**Note: Attempt any TWO questions.** 2×9=18

**Q5. (a) How the direction of a reaction can be predicated by the numeric value of equilibrium constant?** 5

**(b) Write the concept of Bronsted Lowery about acids and bases. Give examples.** 4

**Q6. (a) Write any five uses of ethene.** 5

**(b) Explain any four sources of lipids.** 4

**Q7. (a) Write down five advantages of Solvay's Process.** 5

**(b) Describe two methods for the removal of permanent hardness of water.** 4



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Q1.

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1. The colour of hydrogen iodide (H.I) is:  
(A) Black (B) Purple (C) Colourless (D) Blue
2. In the lime kiln the reaction goes to completion because of:  $\text{CaCO}_3 \longrightarrow \text{CaO} + \text{CO}_2$   
(A) CaO is more stable than  $\text{CaCO}_3$  (B) CaO is not dissociated  
(C) Low temperature (D)  $\text{CO}_2$  escapes continuously
3. If the value of pH solution is less than seven it will be:  
(A) A base (B) An alkali (C) An acid (D) A neutral solution
4. Lactic acid is present in:  
(A) Lemon (B) Orange (C) Apple (D) Sour milk
5. Pitch is black residue of:  
(A) Coal gas (B) Coke (C) Coal tar (D) Coal
6. Dehydration of alcohols can be carried out with:  
(A) HCl (B)  $\text{H}_2\text{SO}_4$  (C) KOH (D) NaOH
7. Thousands of amino acids polymerize to form:  
(A) Vitamins (B) Carbohydrates (C) Proteins (D) Lipids
8. The most important oligosaccharide is:  
(A) Glucose (B) Sucrose (C) Maltose (D) Fructose
9. About 99% atmosphere's mass lies within:  
(A) 35 kilometer (B) 30 kilometer (C) 15 kilometer (D) 11 kilometer
10. Rapid growth of algae in water bodies is because of detergent having:  
(A) Sulphate salts (B) Phosphate salts (C) Sulphonic acid salts (D) Carbonate salts
11. Which one of the following ion causes hardness in water:  
(A)  $\text{Mg}^{2+}$  (B)  $\text{Al}^{3+}$  (C)  $\text{Na}^+$  (D)  $\text{Fe}^{2+}$
12. When  $\text{Na HCO}_3$  is heated it forms:  
(A) CaO (B)  $\text{CaCO}_3$  (C)  $\text{CO}_2$  (D)  $\text{Ca(OH)}_2$

# Lahore Board 2019 (Second Group)

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Maximum Marks: 48

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## (PART - I)

**Q2. Write short answers to any FIVE (5) questions.**

5×2=10

- (i) Define forward and reverse reaction.
- (ii) What do you mean by equilibrium constant?
- (iii) Write the equilibrium constant expression for the reaction.  $H_{2(g)} + I_{2(g)} \rightleftharpoons 2HI_{(g)}$ .
- (iv) What is dynamic equilibrium state?
- (v) Write limitation of Arrhenius concept.
- (vi) Write any two physical properties of bases.
- (vii) Define neutralization reaction. Give an example.
- (viii) What are mixed salts? Give an example.

**Q3. Write short answers to any FIVE (5) questions.**

5×2=10

- (i) Write down different types of coal.
- (ii) What is isomerism? Give an example.
- (iii) What is structural formula? Give an example.
- (iv) What are closed chain hydrocarbons? Give an example.
- (v) Why are alkenes reactive?
- (vi) Name two diseases caused by deficiency of vitamin A.
- (vii) Where are protein found?
- (viii) What is difference between glucose and fructose?

**Q4. Write short answers to any FIVE (5) questions.**

5×2=10

- (i) Write the name of two primary air pollutants.
- (ii) Write two effects of ozone depletion.
- (iii) What is the temperature range of stratosphere and mesosphere?
- (iv) What is the reason of jaundice and typhoid?
- (v) Write two disadvantages of hard water.
- (vi) Name any two processes which involved in metallurgy for extraction of a metal in the pure state from its ore.
- (vii) Write the formulae of matte and urea.
- (viii) Write two advantages of Solvay's process.

## (PART - II)

**Note: Attempt any TWO questions.**

2×9=18

**Q5. (a) State the Law of Mass Action and derive equilibrium constant expression for general reaction. 5**

**(b) Explain the Lewis concept of acids and bases. 4**

**Q6. (a) Write down the uses of acetylene. 5**

**(b) Write down the sources and diseases due to deficiency of some fat soluble vitamins. 4**



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(b) Write down the sources and diseases due to deficiency of some fat soluble vitamins. 4

Q7. (a) Explain the process of smelting with reference to copper. 5

(b) Write two methods for the removal of permanent hardness of water. 4