

AGA KHAN UNIVERSITY EXAMINATION BOARD

SECONDARY SCHOOL CERTIFICATE

CLASS X EXAMINATION

APRIL/ MAY 2019

Chemistry Paper II

Time: 2 hours 20 minutes Marks: 40

INSTRUCTIONS

Please read the following instructions carefully.

1. Check your name and school information. Sign if it is accurate.

**I agree that this is my name and school.
Candidate's Signature**

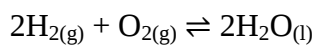
RUBRIC

2. There are TEN questions. Answer ALL questions. Questions 9 & 10 each offer TWO choices. Attempt any ONE choice from each.
3. When answering the questions:

Read each question carefully.
Use a black pointer to write your answers. DO NOT write your answers in pencil.
Use a black pencil for diagrams. DO NOT use coloured pencils.
DO NOT use staples, paper clips, glue, correcting fluid or ink erasers.
Complete your answer in the allocated space only. DO NOT write outside the answer box.
4. The marks for the questions are shown in brackets ().
5. You may use a simple calculator if you wish.

Q.1. (Total 3 Marks)

Consider the following chemical equation.

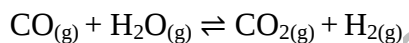


a. Identify the direction in which the given equation shows endothermic reaction. (1 Mark)

b. Give TWO reasons to justify your answer to part a. (2 Marks)

Q.2. (Total 3 Marks)

Consider the given reaction at equilibrium.



a. What is meant by dynamic equilibrium in a chemical reaction? (1 Mark)

b. What will be the effect on the concentration of H_2O if a small amount of CO gas is added to the reaction mixture? Give a reason to support your answer. (2 Marks)

Q.3.

Sulphuric acid is a strong dibasic acid.

(Total 3 Marks)

a. What is a dibasic acid?

(1 Mark)

b. Write a chemical equation to show the stepwise dissociation of sulphuric acid in an aqueous medium.

(2 Marks)

Q.4.

(Total 3 Marks)

a. State the composition of natural gas.

(1 Mark)

b. How does natural gas produce energy? Support your answer with the help of a balanced chemical equation.

(2 Marks)

PLEASE TURN OVER THE PAGE

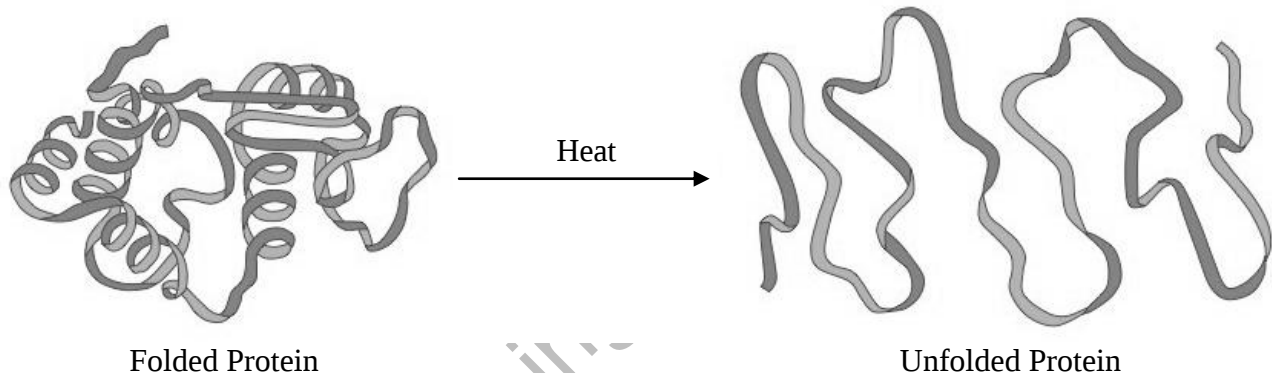
Q.5. (Total 3 Marks)

a. Mention any TWO functions of vitamin A which are essential for human eye. (2 Marks)

b. State any ONE source of vitamin A. (1 Mark)

Q.6. (Total 3 Marks)

The given diagram illustrates the change in the structure of a protein molecule due to increase in temperature.



a. Name the process of changing a folded protein molecule into an unfolded protein molecule. (1 Mark)

b. Write ONE chemical change that causes the unfolding of the protein molecule. (1 Mark)

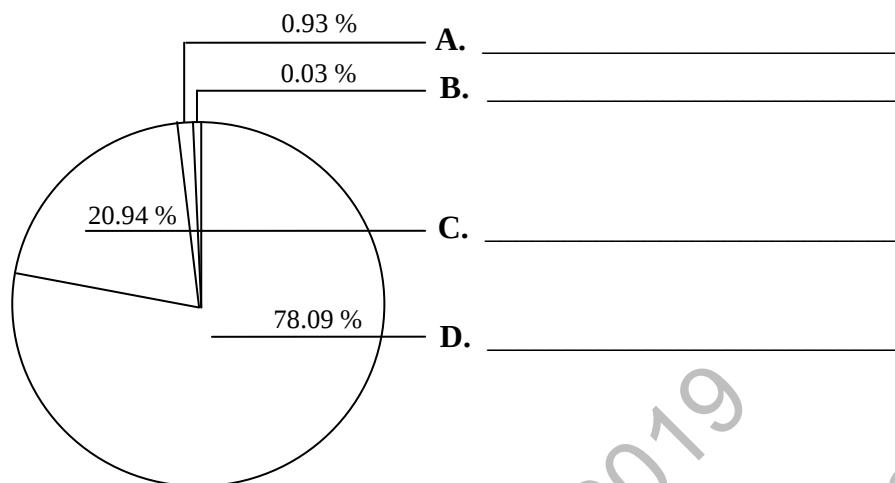
c. What is the effect of unfolding on the function of the protein molecule? (1 Mark)

Q.7.

(Total 4 Marks)

The given pie chart shows the composition of dry air with reference to percentage (%) by volume of gases.

Name the gases **A**, **B**, **C** and **D** as per their percentage composition.



Q.8.

(Total 3 Marks)

Using balanced chemical equations, outline the reactions of Solvay process that take place in the following towers.

a. Carbonating tower

(2 Marks)

b. Ammonia recovery tower

(1 Mark)

PLEASE TURN OVER THE PAGE

EITHER

- OR**

- b.
- Describe any THREE general characteristics of alkanes. (3 Marks)
 - Draw the structural formulae of the TWO isomers with a molecular formula C_4H_{10} . (2 Marks)
 - Show the formation of the following alkyl radicals from the alkane (isomers) mentioned in part ii. (3 Marks)
 - Isobutyl
 - sec-butyl
 - tert-butyl

April/ May 2019
for
Teaching and Learning only

PLEASE TURN OVER THE PAGE

EITHER

- OR**

- Using the given information, describe the stages that enable the extraction of iron from its ore. Write chemical equations to support your answer. (7 Marks)

April/ May
for
Teaching and Learning

April/ May 2019
for
Teaching and Learning only

S1902-1821120

Please use this page for rough work

April/ May 2019
for
Teaching and Learning only

Please use this page for rough work

April/ May 2019
for
Teaching and Learning only

Please use this page for rough work

April/ May 2019
for
Teaching and Learning only