AGA KHAN UNIVERSITY EXAMINATION BOARD

SECONDARY SCHOOL CERTIFICATE

CLASS X

ALTERNATE TO PRACTICAL (ATP)

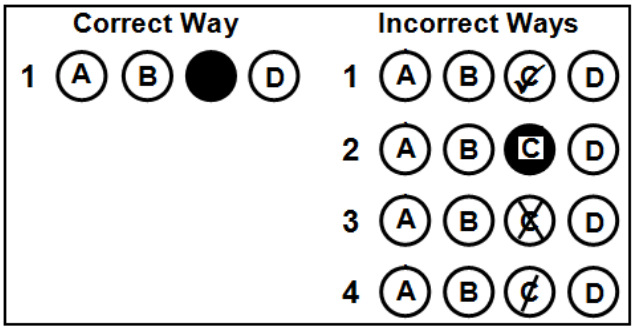
MODEL EXAMINATION PAPER 2021

Chemistry Paper III

Time: 20 minutes Marks: 10

INSTRUCTIONS

1. Read each question carefully.
2. Answer the questions on the separate answer sheet provided. DO NOT write your answers on the question paper.
3. There are 100 answer numbers on the answer sheet. Use answer numbers 1 to 10 only.
4. In each question, there are four choices A, B, C, D. Choose ONE. On the answer grid, black out the circle for your choice with a pencil as shown below.



Candidate's Signature

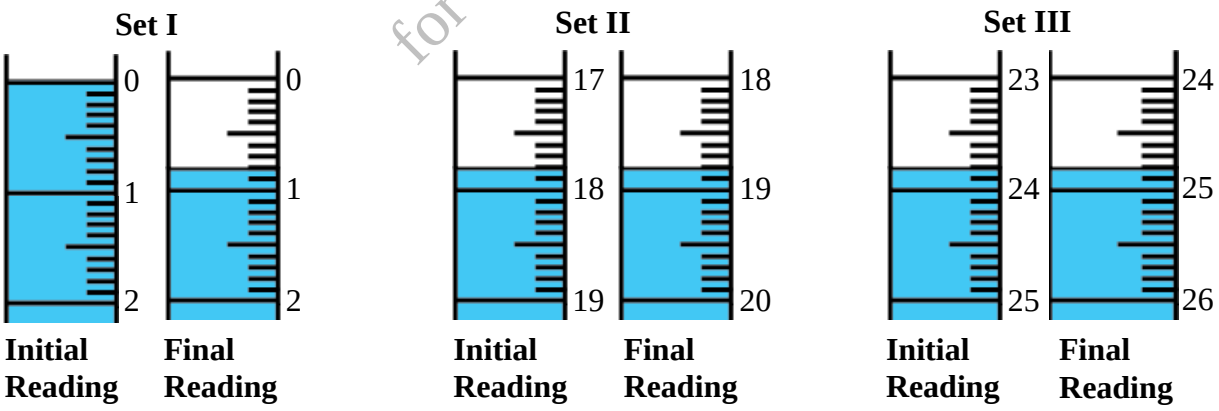
5. If you want to change your answer, ERASE the first answer completely with a rubber, before blacking out a new circle.
6. DO NOT write anything in the answer grid. The computer only records what is in the circles.
7. You may use a simple calculator if you wish.

1. Consider the given test tubes labelled as I, II, III and IV having different sodium halide solutions.

On adding silver nitrate with dilute nitric acid in each of the given test tubes, the option that CORRECTLY interprets the halide ion with the given observations is

Test tube	**I**	**II**	**III**	**IV**
Observation	**No Precipitate**	**Very Pale Yellow Precipitate**	**Very Pale Cream Precipitate**	**White Precipitate**
A	I^-	F^-	Cl^-	Br^-
B	Cl^-	Br^-	I^-	F^-
C	Br^-	Cl^-	F^-	I^-
D	F^-	I^-	Br^-	Cl^-

2. Consider the given diagram representing three sets of burette readings before and after the volumetric analysis of oxalic acid solution.



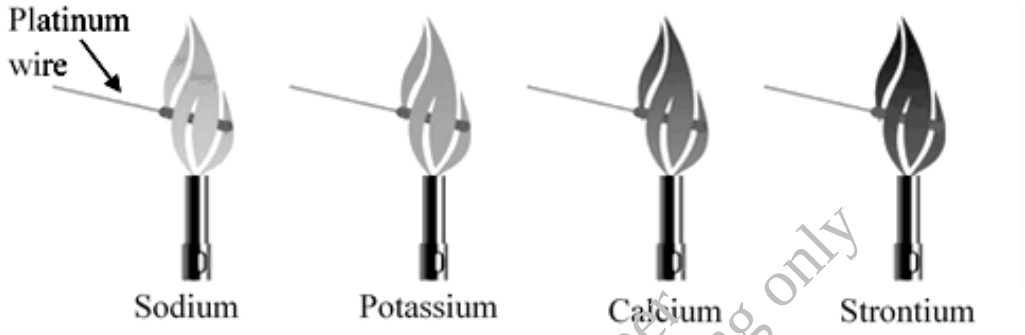
Assuming that the concentration of solution is the same for each analysis, which of the given sets can be used as concordant reading?

A. I and II
B. I and III
C. II and III
D. I, II and III

3. Which of the following indicators is used in the making of pH paper?

   A. Universal indicator
   B. Methyl red indicator
   C. Methyl orange indicator
   D. Phenolphthalein indicator

4. When a clean platinum wire is dipped in a thick paste of metal salt with concentrated hydrochloric acid and is placed on a hot Bunsen flame it will give an intense characteristic colour to the flame.



The colours of flame in the presence of given metal ions will be

	Sodium	**Potassium**	**Calcium**	**Strontium**
A	lilac (pink)	persistent orange	Red	orange-red
B	persistent orange	lilac (pink)	orange-red	red
C	orange-red	red	persistent orange	lilac (pink)
D	red	orange-red	lilac (pink)	persistent orange

5. The pH range covered by the pH paper is

   A. 0-7
   B. 7-14
   C. 0-14
   D. 1-14

6. A student performs the given reaction and notes down its observation.

Reaction	Observation
Solution of an organic compound + Freshly prepared ferric chloride solution	Violet colour appears

Based on the given observation, it is inferred that the test solution contains

A. aldehyde.
B. ketone.
C. phenol.
D. amine.

7. When acetaldehyde reacts with Fehling's solution, it gives red precipitates.

These red precipitates are formed due to the formation of

A. carbon dioxide.
B. copper(I) oxide.
C. copper(II) oxide.
D. carbon monoxide.

8. When CO_2 gas is passed through lime water it turns milky due to the formation of

A. calcium sulphate.
B. calcium chloride.
C. calcium carbonate.
D. calcium hydroxide.

9. Consider the given equation for the decomposition of sugar.

$$C_{12}H_{22}O_{11} \rightarrow 12C + 11H_2O \uparrow$$

A student decomposes some commercial sugar crystals and collects 100 g of residual carbon. The amount of sugar that the student has taken to decompose should be

(**Note**: ${}^{1}_{1}H$, ${}^{12}_{6}C$ and ${}^{16}_{8}O$)

A. 3.5 g
B. 42.1 g
C. 492.4 g
D. 237.5 g

10. To make a sample of permanent hard water soft, compound **X** is added in order to precipitate compound **Y**.

The compounds **X** and **Y** can be identified as

	X	**Y**
A	$CaSO_4$	Na_2CO_3
B	Na_2CO_3	$CaCO_3$
C	$Ca(HCO_3)_2$	$CaCl_2$
D	Na_2CO_3	$NaSO_4$

END OF PAPER

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