

AGA KHAN UNIVERSITY EXAMINATION BOARD

SECONDARY SCHOOL CERTIFICATE

CLASS X EXAMINATION

MAY 2012

Chemistry Paper I

Time allowed: 35 minutes Marks 25

INSTRUCTIONS

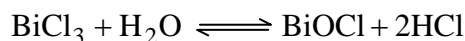
1. Read each question carefully.
2. Answer the questions on the separate answer sheet provided. DO NOT write your answers on the question paper.
3. There are 100 answer numbers on the answer sheet. Use answer numbers 1 to 25 only.
4. In each question there are four choices A, B, C, D. Choose ONE. On the answer grid black out the circle for your choice with a pencil as shown below.

Correct Way	Incorrect Ways
1 (A) (B) ● (D)	1 (A) (B) (C) (D)
	2 (A) (B) ● (C) (D)
	3 (A) (B) (C) (D)
	4 (A) (B) (C) (D)

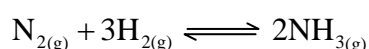
Candidate's Signature

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.

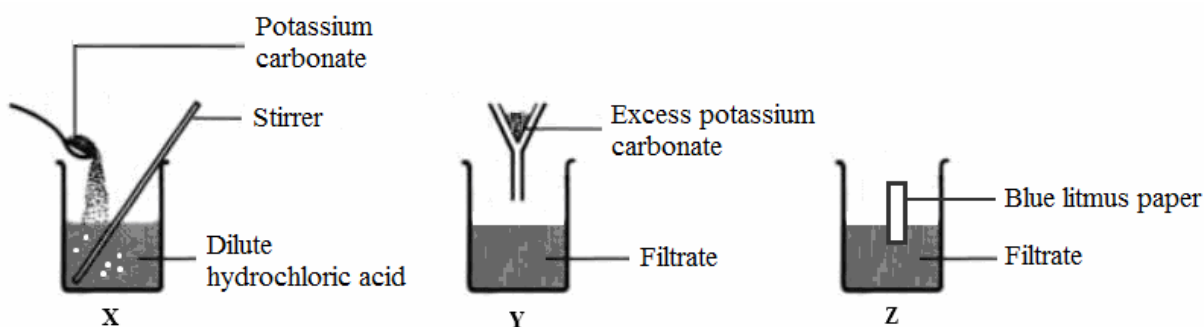
1. Which of the following two concentrations when changed will cause the equilibrium to shift to the left?



- A. Decrease $[\text{H}_2\text{O}]$, increase $[\text{BiOCl}]$
 B. Increase $[\text{H}_2\text{O}]$, increase $[\text{HCl}]$
 C. Decrease $[\text{BiCl}_3]$, decrease $[\text{BiOCl}]$
 D. Increase $[\text{BiCl}_3]$, decrease $[\text{HCl}]$
2. What will be the unit of K_c for the given reaction?



- A. moles dm^{-3}
 B. moles⁻¹ dm^{-3}
 C. moles⁻² dm^{-4}
 D. moles⁻² dm^{+6}
3. What volume of 1 M H_2SO_4 is needed to neutralize 25 cm^3 of 0.5 M calcium hydroxide?
 (Hint: $\text{Ca}(\text{OH})_2 + \text{H}_2\text{SO}_4 \rightarrow \text{CaSO}_4 + 2\text{H}_2\text{O}$)
- A. 6.25 cm^3
 B. 12.5 cm^3
 C. 16 cm^3
 D. 25 cm^3
4. The given figure shows addition of potassium carbonate to dilute hydrochloric acid until no more could be dissolved in it, even on heating.



Which of the following results will be observed in figures (X) and (Z)?

	X	Z
A.	Carbon monoxide bubbles off	Litmus paper turns red
B.	Carbon dioxide bubbles off	No change
C.	Hydrogen bubbles off	Litmus paper turns red
D.	Hydrogen carbonate bubbles off	No change

5. Organic compounds have X bonding; therefore they exhibit Y electrical conductivity both in fused state and in solution form.

Which of the following correctly identifies X and Y?

	X	Y
A.	Ionic	Poor
B.	Metallic	Good
C.	Covalent	Poor
D.	Ionic	Good

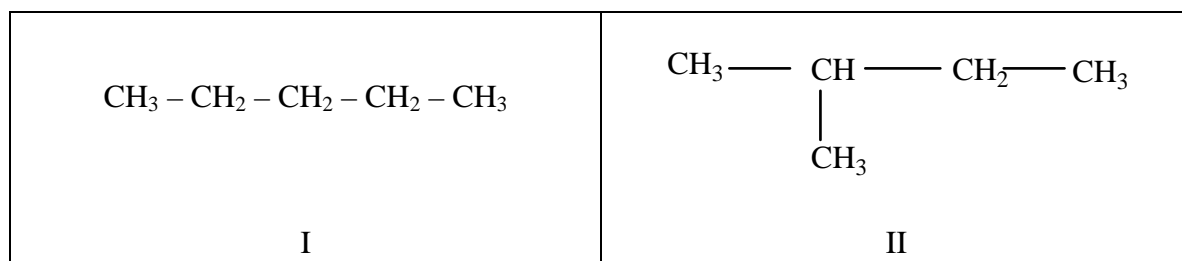
6. Which of the following shows the molecular formula of pent-1-ene?

- A. C_5H_{12}
 B. C_5H_{10}
 C. C_5H_8
 D. C_5H_6

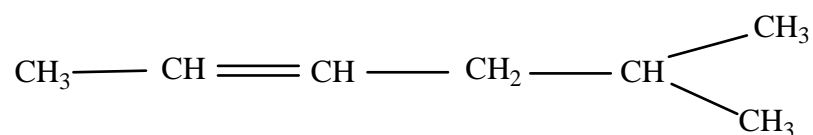
7. The molecular mass of two consecutive members in a homologous series differs by

- A. 10 units.
 B. 12 units.
 C. 14 units.
 D. 16 units.

8. Which of the following statements is correct for the given compounds?



- A. Both are isomers of each other.
 B. Both show different molecular formula.
 C. Both possess different chemical properties.
 D. Both belong to different homologous series.
9. Which of the following is the name of the given compound according to IUPAC system?



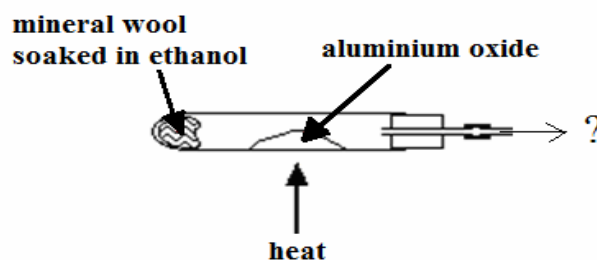
- A. 5, 5 - dimethyl - 2 - pentene
 B. 5 - methyl - 2 - hexene
 C. 2 - methyl - 4 - hexene
 D. 1, 1 - dimethyl - 3 - pentene

PLEASE TURN OVER THE PAGE

10. Which of the given characteristics of methane is considered important when it is used as a fuel?
- A. It is a gas.
 - B. It is odourless.
 - C. It has a low boiling point.
 - D. It burns exothermically.

11. When ethanol vapours are passed over hot aluminium oxide, it gives off

- A. hydrogen.
- B. ethane.
- C. ethene.
- D. ethyne.



12. Which of the following is burnt in air to produce a smoky luminous oxy-acetylene flame?

- A. Methane
- B. Butyne
- C. Ethyne
- D. Ethanol

13. Which of the following pairs is of disaccharides?

- A. Lactose and sucrose
- B. Glucose and lactose
- C. Sucrose and fructose
- D. Fructose and lactose

14. Which of the following does NOT denature proteins?

- A. Heat
- B. Water
- C. Vinegar
- D. Ethanol

15. Which of the following statements shows the significance of nucleic acid?

- A. It acts as an energy reservoir.
- B. It works as a carrier of oxygen.
- C. It directs the synthesis of proteins.
- D. It removes excess water from the cell.

16. Which of the following substances acts as enzymes in the human body?

- A. Fats
- B. Proteins
- C. Minerals
- D. Carbohydrates

17. Which of the following processes reduces carbon dioxide gas from the atmosphere?
- A. Nitrification
 - B. Denitrification
 - C. Photosynthesis
 - D. Polymerization
18. Which of the following chemical equations shows the formation of ozone?
- A. $O_2 + O_2 \rightarrow O_3$
 - B. $O + O_2 \rightarrow 2O_3$
 - C. $O + 2O_2 \rightarrow 2O_3$
 - D. $2O + 2O_2 \rightarrow 2O_3$
19. Ozone is used as a bleaching agent because it
- A. is an allotropic form of oxygen.
 - B. has high boiling point.
 - C. releases atomic oxygen.
 - D. sterilizes water.
20. Which of the following statements describe the survival of fish and other organisms under frozen water in a lake?
- I. Ice acts as an insulator.
 - II. Frozen water has maximum density.
 - III. Fish adapt themselves according to the temperature.
 - IV. There is uniform distribution of gases and nutrients in the lake.
- A. I and II
 - B. II and III
 - C. III and IV
 - D. I and IV
21. Which of the following describes the term sterilization?
- A. Removal of odour
 - B. Removal of turbidity
 - C. Elimination of colour
 - D. Elimination of pathogenic bacteria
22. Na_2CO_3 removes hardness of water by precipitating the impurities in the form of
- A. carbonates.
 - B. bicarbonates.
 - C. oxalates.
 - D. sulphates.

23. Which of the following products is obtained when carbon monoxide reacts with iron (III) oxide in the blast furnace?
- A. Fe
 - B. FeO
 - C. Fe₂O₃
 - D. Fe₃O₄
24. Which of the following is identified as the first step in the refining process of crude oil?
- A. Boiling
 - B. Heating
 - C. Evaporation
 - D. Neutralization
25. Which of the following chemicals is added to lower the melting point of the mixture in aluminium extraction?
- A. Al₂O₃
 - B. Na₃AlF₆
 - C. NaAlO₂
 - D. CaF₂

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