

**AGA KHAN UNIVERSITY EXAMINATION BOARD**

**SECONDARY SCHOOL CERTIFICATE**

**CLASS IX 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	<input type="radio"/> A <input type="radio"/> B <input checked="" type="radio"/> C <input type="radio"/> D	1	<input type="radio"/> A <input type="radio"/> B <input checked="" type="radio"/> C <input type="radio"/> D
		2	<input type="radio"/> A <input type="radio"/> B <input checked="" type="radio"/> C <input type="radio"/> D
		3	<input type="radio"/> A <input type="radio"/> B <input checked="" type="radio"/> C <input type="radio"/> D
		4	<input type="radio"/> A <input type="radio"/> B <input checked="" type="radio"/> C <input type="radio"/> 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.

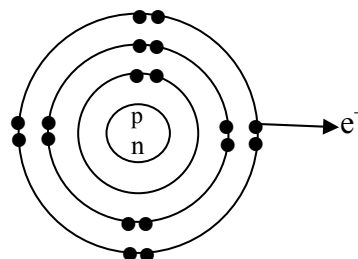
1. A student has to identify the element, mixture and compound in the given substances.

i. Mercury	ii. Glucose	iii. Ammonia	iv. Brass
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Which of the following arrangements is correct for the given substances?

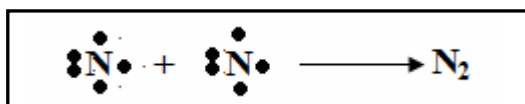
	i	ii	iii	iv
A.	Element	Compound	Mixture	Element
B.	Element	Compound	Compound	Mixture
C.	Compound	Element	Mixture	Compound
D.	Compound	Mixture	Mixture	Element

2. Which of the following represents the formula mass of ammonium ion?
- A. 15  
B. 16  
C. 17  
D. 18
3. Which type of chemical reaction occurs when zinc metal reacts with dilute sulphuric acid?
- A. Addition reaction  
B. Displacement reaction  
C. Decomposition reaction  
D. Double displacement reaction
4. All of the following conclusions are drawn by Rutherford on the experiment of scattering alpha particles EXCEPT that
- A. the space inside the atom is hollow.  
B. the central part of atom is positively charged.  
C. the electrons are distributed in space around nucleus.  
D. the electrons jump to higher energy level by absorbing energy.
5. If an atom has 17 electrons, then its outermost shell will be
- A. K.  
B. L.  
C. M.  
D. N.
6. Which of the following elements represents the electronic structure of the ion shown in the given diagram?



Electronic Structure of an ion  $X^{+1}$

7. Which of the following characteristics is/are correct for an isotope?
- Similar electronic structures
  - Similar chemical properties
  - Similar mass number
- I only
  - I and II only
  - II only
  - II and III only
8. Which of the following elements has the largest atomic radius?
- Cs
  - Li
  - Fr
  - Rb
9. The elements having 3 shells and  $5e^-$  in their outermost shell belong to group
- II A.
  - III A.
  - IV A.
  - V A.
10. All of the following periodic trends increase as we move from left to right in a period, EXCEPT
- atomic radii.
  - electronegativity.
  - electron affinity.
  - ionization energy.
11. Which of the following types of bond is formed when a metal reacts with a non-metal?
- Ionic
  - Metallic
  - Covalent
  - Coordinate covalent
12. Which type of covalent bonding is formed when two atoms of nitrogen react with each other?

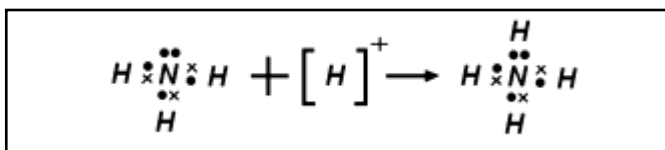


- Single
- Double
- Triple
- Coordinate

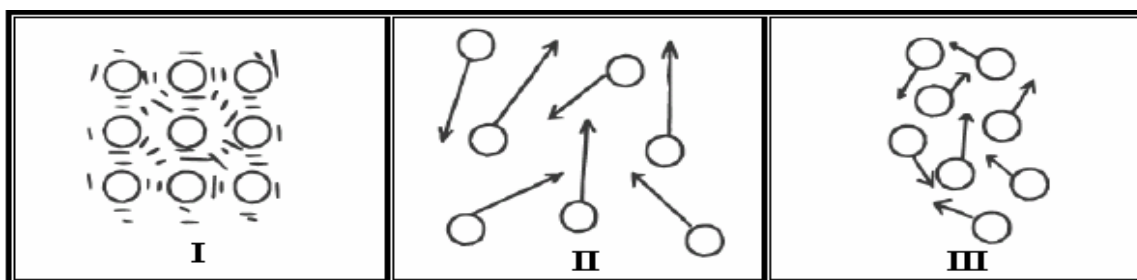
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13. In the given reaction,  $H^+$  acts as a/an

- A. neutral species.
- B. acceptor.
- C. carrier.
- D. donor.



14. The diagram given below represents the movement and distribution of particles in different states of matter.



Which of the following arrangements is correct for the given diagram?

	<b>I</b>	<b>II</b>	<b>III</b>
A.	Solid	Liquid	Gas
B.	Liquid	Solid	Gas
C.	Solid	Gas	Liquid
D.	Liquid	Gas	Solid

15. Which of the following processes involves the increase of kinetic energy of molecules of a liquid by heating?

- A. Condensation
- B. Evaporation
- C. Sublimation
- D. Melting

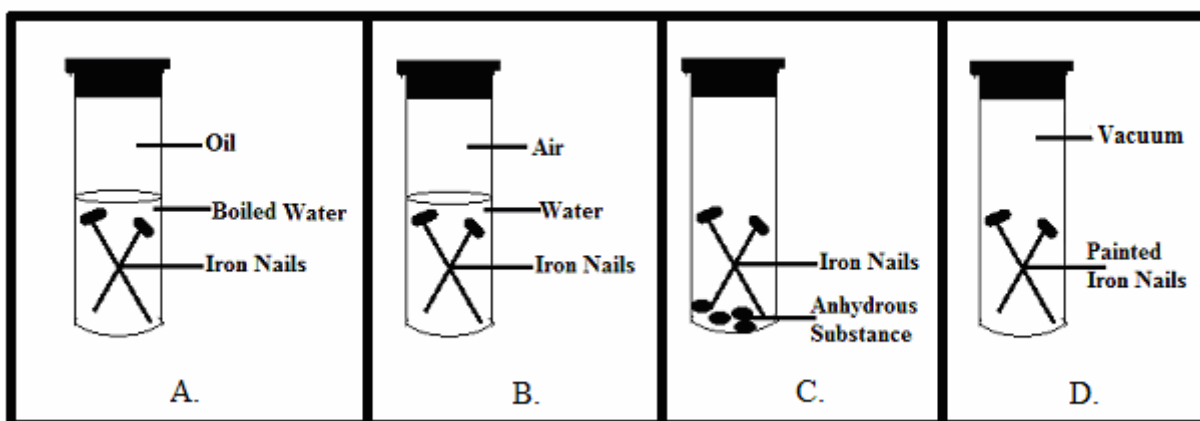
16. Which of the following is an example of diffusion?

- A. Bubbles rising in a beaker of boiling water
- B. Fragrance of flowers in a garden
- C. Swelling of raisins in water
- D. Steam condensing on a cold window

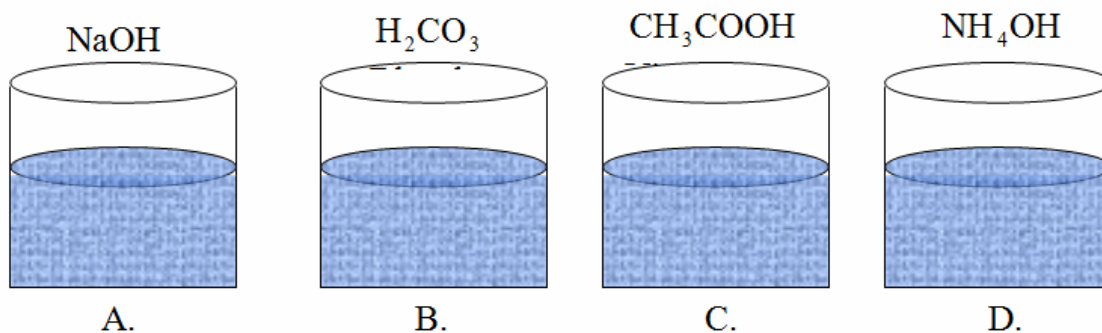
17. A teaspoon of coffee granules dissolves when mixed in a cup of hot water. This process produces a coffee solution. The original granules are classified as a

- A. product.
- B. reactant.
- C. solvent.
- D. solute.

18. Which of these action(s) will cause more sugar to dissolve in a saturated solution?
- Add more sugar while stirring.
  - Heat the solution while adding more sugar.
  - Grind the sugar to a powder; then add while stirring.
- II only
  - I and II only
  - III only
  - II and III only
19. A teacher prepared 0.125 M sodium chloride stock solution. What volume of the stock solution is required to prepare a dilution of 0.05 M in 100 ml?
- 100 ml
  - 60 ml
  - 40 ml
  - 20 ml
20. Which of the following test tubes shows favourable conditions for corrosion?



21. A laboratory assistant arranges a set of solutions.
- Which of the following is an example of a strong electrolyte?



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22. Which of the following products is obtained in the given word equation?



- A. Metal ion
- B. Metal oxide
- C. Metal hydroxide
- D. Metal oxide + Hydrogen

23. Which of the following metals reacts explosively with dilute acids?

- A. Zinc
- B. Silver
- C. Copper
- D. Calcium

24. Which of the following metals does NOT occur in free state in nature?

- A. Copper
- B. Gold
- C. Silver
- D. Sodium

25. A student put some calcium tablets in a glass of water. He observed that the tablets sank and reacted vigorously with water.

Which of the following products are formed in the above reaction?

- A.  $\text{Ca(OH)}_2 + \text{H}_2$
- B.  $\text{Ca(OH)}_2 + \text{H}_2\text{O}$
- C.  $\text{CaO} + \text{H}_2$
- D.  $\text{CaO} + \text{H}_2\text{O}$

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