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# Chemistry Science Questions for CDS Exams

## Chemistry Quiz 1

Direction : Study the following question carefully and choose the right answer.

**1. Silica gel is a**

A. moisturizer    B. flavouring agent    C. drying agent    D. delicious food

**2. Which of the following is a radioactive element?**

A. Cobalt    B. Uranium    C. Argon    D. Chromium

**3. Silver gets corroded due to \_\_\_\_\_ in air.**

A. Oxygen    B. Hydrogen Sulfide    C. Carbon dioxide    D. Nitrogen

**4. Consider the following statements regarding the properties and uses of glass wool.**

**I. Glass wool has tensile strength greater than steel.**

**II. Glass wool is fire proof.**

**III. Glass wool has high electrical conductivity and absorbs moisture.**

**IV. Glass wool is used to prepare fiber glass.**

**Which of the statements given above are correct?**

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

**5. Which one of the following reducing agents can also act as an oxidizing agent?**

☐ A.  $H_2$     ☐ B.  $H_2S$     ☐ C.  $SO_2$     ☐ D.  $HI$

**6. Which one of the following is not a mixture?**

A. Toothpaste    B. Toilet soap    C. Baking soda    D. Vinegar

**7. The cleaning of dirty clothes by soaps and detergents is due to a type of molecules called surfactants, which are present in soaps and detergents. The surfactant molecules remove the dirt by**

A. Making the cloth slippery

B. Producing some gases between the dirt and the cloth

C. Dissolving the dirt

D. Forming some aggregates of themselves and take away the dirt in the core of the aggregates

**8. The polymeric fibre used as a substitute for wool in making synthetic blankets, sweaters, etc., is**

A. Nylon    B. Teflon    C. Orlon    D. Bakelite

**9. Which one of the following chemicals is commonly used by farmers to destroy weeds?**

A. DDT    B. Malathion    C. Methyl bromide    D. 2, 4-D

**10. If a limestone piece is dipped in water, a bubble evolves. The bubbling is due to**

A. Hydrogen    B. Oxygen    C. Water vapour    D. Carbon dioxide

**Correct Answers:**

1	2	3	4	5	6	7	8	9	10
C	B	B	B	C	C	D	C	D	D

**Explanations:****1.****Silica gel is a drying agent.**

**Silica gel** is a granular, vitreous, porous form of silicon dioxide made synthetically from sodium silicate. Silica gel contains a nano-porous silica micro-structure, suspended inside a liquid. Most applications of silica gel require it to be dried, in which case it is called silica xerogel. For practical purposes, silica gel is often interchangeable with silica xerogel. Silica xerogel is tough and hard; it is more solid than common household gels like gelatin or agar. It is a naturally occurring mineral that is purified and processed into either granular or beaded form. As a desiccant, it has an average pore size of 2.4 nanometers and has a strong affinity for water molecules.

**2.****Uranium** is a radioactive element.

A **radioactive element** does not have any stable isotopes, which means it may spontaneously degenerate. Radioactive elements include uranium, curium and thorium.

**3.**Silver gets corroded due to **hydrogen sulfide** in air.

**Silver** is a gray-white metal that is malleable and soft. The metal is found in lead ore, but can also be a byproduct of mining other metals like gold, copper and zinc. It is a precious metal classified alongside platinum and gold, and is the best conductor of electricity of all metals. The chemical symbol for silver is Ag.

**Silver is known to be resistant to corrosion, as it does not oxidize easily. When silver is exposed to air, a layer of silver sulfide is formed on the surface.**

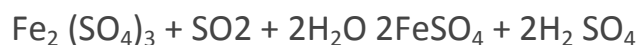
4.

Glass wool is an insulating material, obtained from fiber glass arranged into a texture similar to wool. Glass wool is produced in rolls or in slabs with different thermal and mechanical properties.

5.

SO<sub>2</sub> can act as a reducing agent as well as an oxidising agent.

It reduces ferric sulphate to ferrous sulphate



It also oxidises H<sub>2</sub>S to S



Oxidising agents	Reducing agents
Bromine (Br <sub>2</sub> )	Carbon (C)
Chlorine (Cl <sub>2</sub> )	Carbon monoxide (CO)
Concentrated sulphuric acid (H <sub>2</sub> SO <sub>4</sub> )	Hydrogen (H <sub>2</sub> )
Nitric acid (HNO <sub>3</sub> )	Hydrogen sulphide (H <sub>2</sub> S)
Oxygen (O <sub>2</sub> )	Metals
Potassium manganate(VII) (KMnO <sub>4</sub> )	Potassium iodide (KI)
Potassium dichromate(VI) (K <sub>2</sub> Cr <sub>2</sub> O <sub>7</sub> )	Sulphur dioxide (SO <sub>2</sub> )
Hydrogen peroxide (H <sub>2</sub> O <sub>2</sub> )	Ammonia (NH <sub>3</sub> )

6.

Sodium bicarbonate also known as baking soda is the chemical compound with the formula NaHCO<sub>3</sub>. It is a white solid that is crystalline but often appears as a fine powder. It is sparingly soluble in water.

7.

The cleaning of dirty clothes by soaps and detergents is due to a type of molecules called surfactants. The surfactant molecules remove the dirt by forming some

aggregates of themselves and take away the dirt in the core of aggregates. The spherical aggregate of surfactant molecules in water is called a micelle.

8.

Polyacrylonitrile or orlon is used as a substitute for wool in making synthetic blankets, sweaters etc. It is a polymer of acrylonitrile or vinyl cyanide.

9.

2, 4 -D (2, 4-dichlorophenoxy acetic acid) is used as a weedicide.



10.

When limestone piece is dipped in water, the bubbles are evolved due to evolution of carbon dioxide.





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