

Islamic Golden Age: Chemistry and Nature

History Of Chemistry · Answer Key · 20 Questions

1. Which scholar of the Islamic Golden Age is famous for classifying substances into mineral, vegetable, and animal categories in his work 'Kitab al-Asrar'?

- A) Jabir ibn Hayyan
- B) Al-Razi**
- C) Al-Jahiz
- D) Ibn al-Haytham

2. Al-Razi famously experimented with the distillation of which substance derived from animal fats or vegetable oils to create soaps?

- A) Glycerol**
- B) Acetic acid
- C) Ammonia
- D) Petroleum

3. Which polymath wrote 'Kitab al-Hayawan' (Book of Animals), contributing to the early understanding of organic biological classification?

- A) Al-Farabi
- B) Al-Jahiz**
- C) Avicenna
- D) Al-Biruni

4. What natural organic substance did Islamic chemists extract from plants like madder to create red dyes for textiles?

- A) Alizarin**
- B) Indigo
- C) Curcumin
- D) Chlorophyll

5. Ibn al-Baitar, a famous botanist, compiled a vast encyclopedia describing the chemical and medicinal properties of how many plants?

- A) 50
- B) 1400**
- C) 500
- D) 10000

6. The process of essential oil extraction from flowers, such as roses, was perfected using which apparatus during the Islamic Golden Age?

- A) Bunsen burner
- B) Alembic**
- C) Centrifuge
- D) Vacuum chamber

7. Jabir ibn Hayyan described the preparation of which organic acid by the destructive distillation of vinegar?

- A) Acetic acid**
- B) Citric acid
- C) Lactic acid
- D) Formic acid

8. Which substance extracted from the glands of certain animals was used in the Islamic Golden Age to create early forms of musk perfume?

- A) Civet
- B) Ambergris
- C) Castoreum
- D) Musk deer secretion**

9. Islamic chemists utilized gallnuts from oak trees, which are high in what organic compound, for the production of iron gall ink?

- A) Tannins**
- B) Cellulose
- C) Lignin
- D) Starch

10. Which natural organic pigment was derived from the indigo plant and extensively used in the Islamic world for dyeing fabrics?

- A) Indigotin**
- B) Carotene
- C) Anthocyanin
- D) Betalain

11. Al-Razi used the term 'naft' to describe crude oil; from which natural source did the Islamic world believe this substance originated?

- A) Decomposition of organic matter**
- B) Volcanic activity
- C) Salt deposits
- D) Atmospheric condensation

12. What plant-based organic alkaloid was studied by Islamic physicians for its sedative and medicinal effects on animal nervous systems?

- A) Opium (morphine)**
- B) Caffeine
- C) Nicotine
- D) Quinine

13. Which substance, extracted from the urine of animals or human waste, was used by Islamic chemists as a source of nitrogen for various chemical processes?

- A) Ammonia**
- B) Nitric acid
- C) Sulfuric acid
- D) Sodium carbonate

14. Islamic pharmacists refined the use of beeswax in ointments; what is the primary organic chemical class of beeswax?

- A) Esters**
- B) Ketones
- C) Aldehydes
- D) Ethers

15. The production of 'attar' (perfume) in the Islamic Golden Age involved the extraction of aromatic oils from which nature-derived source?

- A) Flower petals**
- B) Crushed rocks
- C) Sea salt
- D) Metallic ores

16. Which organic material was commonly used in the Islamic world for water purification and filtration due to its adsorptive properties?

- A) Activated charcoal**
- B) Sandstone
- C) Limestone
- D) Clay

17. Islamic scientists identified that certain organic substances, when heated, produced 'empyreumatic' oils; this is the early discovery of what process?

- A) Pyrolysis**
- B) Electrolysis
- C) Osmosis
- D) Crystallization

18. Henna (*Lawsonia inermis*) contains a molecule called lawsone which binds to keratin; to which class of organic compounds does lawsone belong?

A) Naphthoquinone

B) Carbohydrate

C) Lipid

D) Protein

19. Which animal-derived substance was used by Islamic physicians as a source of collagen for early surgical sutures?

A) Sheep gut (Catgut)

B) Spider silk

C) Fish skin

D) Horse hair

20. In the context of Islamic alchemy, which substance was extracted from the ashes of marine plants to produce alkali for soap making?

A) Potash/Soda ash

B) Mercury

C) Sulfur

D) Arsenic