

Chemistry-Previous Year Questions [1995-2010]

1. **Excessive release of the pollutant carbon monoxide (CO), into the air may produce a condition in which oxygen supply in the human body decreases. What causes this condition? [2010]**

a) When inhaled into the human body, CO is converted into CO₂.
b) The inhaled CO has much higher affinity for haemoglobin as compared to oxygen.
c) The inhaled CO destroys the chemical structure of haemoglobin.
d) The inhaled CO adversely affects the respiratory centre in the brain.

2. **Consider the following: [2010]**

1. Oxides of Hydrogen.
2. Oxides of Nitrogen.
3. Oxides of Sulphur.

Which of the above is/are the emission/emissions from coal combustion at thermal power plants?

a) 1 and 2 only b) 3 only
c) 2 and 3 only d) 1, 2 and 3

3. **Hydrogen fuel cell vehicles produce one of the following as "exhaust": [2010]**

a) NH₃ b) CH₄
c) H₂O d) H₂O₂

4. **Chlorination is a process used for water purification. The disinfecting action of chlorine is mainly due to: [2010]**

a) The formation of hydrochloric acid when chlorine is added to water.
b) The formation of hypochlorous acid when chlorine is added to water.
c) The formation of nascent oxygen when chlorine is added to water.

d) The formation of hydrogen when chlorine is added to water.

5. **Which one of the following is used as an explosive? [2009]**

a) Phosphorus trichloride
b) Mercuric oxide
c) Graphite
d) Nitroglycerine

6. **In a dry cell (battery), which of the following are used as electrolytes? [2009]**

a) Ammonium chloride and Zinc chloride
b) Sodium chloride and Calcium chloride
c) Magnesium chloride and Zinc chloride
d) Ammonium chloride and calcium chloride

7. **Which one of the following pairs of metals constitutes the lightest metal and the heaviest metal, respectively? [2008]**

a) Lithium and mercury
b) Lithium and osmium
c) Aluminium and osmium
d) Aluminium and mercury

8. **Mixture of which one of the following pairs of gases is the cause of occurrence of most of the explosions in mines? [2008]**

a) Hydrogen and oxygen
b) Oxygen and acetylene
c) Methane and air
d) Carbon dioxide and methane

9. **Which one of the following is also called Stranger Gas? [2008]**

a) Argon b) Neon
c) Xenon d) Nitrous oxide

10. What are Rubies and Sapphires chemically known as? [2008]

- a) Silicon dioxide b) Aluminum oxide
c) Lead tetroxide d) Boron nitride

11. Which one among the following is called philosopher's wool? [2007]

- a) Zinc bromide b) Zinc nitrate
c) Zinc oxide d) Zinc chloride

12. Which one of the following does not contain silver? [2007]

- a) Horn Silver b) German silver
c) Ruby silver d) Lunar caustic

13. Which one of the following types of glass can cut off ultraviolet rays? [2007]

- a) Soda glass b) Pyrex glass
c) Jena glass d) Crookes glass

14. Which one of the following non-metals is not a poor conductor of electricity? [2007]

- a) Sulphur b) Selenium
c) Bromine d) Phosphorus

15. Which one of the following is another name of RDX? [2007]

- a) Cyanohydrin b) Selenium
c) Cyclohexane d) Cyclonite

16. Consider the following chemicals: [2006]

1. Benzene
2. Carbon tetrachloride
3. Sodium Carbonate
4. Trichloroethylene

Which of the above is/are used as dry cleaning chemicals?

- a) 1 Only b) 2 Only
c) 1, 2 and 4 Only d) 1, 2, 3 and 4

17. Assertion (A): Cellulose is used in making shatter proof glass.: [2006]

Reason (R): Polysaccharides are not soluble in water.

- a) Both A and R are individually true and R is the correct explanation of A.
b) Both A and R are individually true but R is not the correct explanation of A.
c) A is True but R is false
d) A is false but R is true

18. Which are the materials generally employed as solder in soldering operation in electronics.: [2006]

- a) Iron and tin
b) Lead and tin
c) Aluminum and lead
d) Aluminum and iron

19. Consider the following statements: [2005]

1. During the process of osmosis, the solvent travels from the concentrated solution to the dilute solution.
2. In the reverse osmosis, external pressure is applied to the dilute solution.

Which of the statements is/are correct?

- a) 1 only b) 2 only
c) Both 1 and 2 d) Neither 1 nor 2

20. Assertion (A): The main constituent of the Liquefied Petroleum Gas is methane.: [2005]

Reason (R): Methane can be used directly for burning in homes and factories where it can be supplied through pipelines.

- a) Both (A) and (R) are individually true and R is the correct explanation of A
b) Both (A) and (R) are individually true and R is not the correct explanation of A
c) A is true but R is false
d) A is false but R is true

21. Consider the following statements:
[2005]

1. Liquefied Natural Gas (LNG) is liquefied under extremely cold temperatures and high pressure to facilitate storage or transportation in specially designed vessels.
 2. First LNG terminal in India was built in Hassan.
 3. Natural Gas Liquids (NGL) are separated from LPG and these include ethane, propane, butane and natural gasoline.
- Which of the statements is/are correct?

- a) 1 only b) 1 and 3
c) 2 and 3 d) 1, 2 and 3

22. Which one of the following is the correct sequence of the given substances in the decreasing order of their densities?
[2005]

- a) Steel>Mercury>Gold
b) Gold>Mercury>Steel
c) Steel>Gold>Mercury
d) Gold>Steel>Mercury

23. Consider the following statements:
[2005]

1. Anhydrous sodium carbonate is commonly known as baking soda.
2. Baking soda is used in fire extinguishers.
3. Bleaching powder is manufactured in Hasenclever plant.

Which of the statements is/are correct?

- a) 1, 2 and 3 b) 2 and 3
c) 3 only d) 1 and 2

24. Consider the following statements:
[2004]

1. Baking soda is used in fire extinguishers.
2. Quicklime is used in the manufacture of glass.
3. Gypsum is used in the manufacture of Plaster of Paris.

Which of the statements given above is/are correct?

- a) 1 and 2 b) 2 and 3
c) 1 only d) 1, 2 and 3

25. Match List-I (Fuel Gases) with List-II (Major Constituents) and: **[2004]**

select the correct answer using the codes given below the Lists:

List-I (Fuel Gases)	List-II (Major Constituents)
A. CNG	1. Carbonmonoxide, Hydrogen
B. Coal gas	2. Butane, Propane
C. LPG	3. Methane, Ethane
D. Water gas	4. Hydrogen, Methane, Carbonmonoxide

Codes:

- A B C D
a) 2 1 3 4
b) 3 4 2 1
c) 2 4 3 1
d) 3 1 2 4

26. Salts of which of the following elements provide colours to fireworks? **[2004]**

- a) Zinc and sulphur
b) Potassium and mercury
c) Strontium and barium
d) Chromium and nickel

27. Consider the following statements:
[2003]

1. Molasses is a by-product of sugar production process.
2. Bagasse obtained in the sugar mills is used as a fuel in the boilers to generate steam for the sugar factories.

3. Sugar can only be produced from sugarcane as the raw material.
Which of these statement are correct?

- a) 1 and 2 b) 2 and 3
c) 1 and 3 d) 1, 2 and 3

28. Consider the following statements

The purpose of adding sodium sulphate and sodium silicate to the detergent in a washing powder is: [2003]

1. To keep the washing powder dry
2. To maintain the alkalinity of the powder
Which of these statements is/are correct?

- a) Only 1 b) Only 2
c) Both 1 and 2 d) Neither 1 nor 2

29. Assertion (A): In the periodic table of chemical elements, electron affinity is always found to increase from top to bottom in a group.: [2003]

Reason (R): In a group, the atomic radial generally increase from top to bottom.

- a) Both A and R are individually true and R is the correct explanation of A
b) Both A and R are individually true but R is NOT the correct explanation of A
c) A is true but R is false
d) A is false but R is true

30. Assertion (A): Unsaturated fats are more reactive compared with the saturated fats.: [2003]

Reason (R): Unsaturated fats have only single bonds in their structure.

- a) Both A and R are individually true and R is the correct explanation of A
b) Both A and R are individually true but R is NOT the correct explanation of A
c) A is true but R is false
d) A is false but R is true

31. With reference to ionic compounds, consider the following statements: [2003]

1. Ionic compounds are insoluble in alcohol.
2. Ionic compounds in the solid state are good conductors of electricity.

Which of these statements is/are correct?

- a) Only 1 b) Only 2
c) Both 1 and 2 d) Neither 1 nor 2

32. Which one of the following statements is correct? [2003]

- a) The presence of NaCl increases the rate of setting of Plaster of Paris
b) Gypsum is added to the cement to slow down its rate of setting
c) All alkaline earth metals form hydrated salts
d) Barium and Strontium are found free in nature

33. Which one of the following statements is correct? [2002]

- a) The boiling point of an aqueous solution is higher than that of pure water
b) Addition of solutes to a solution causes an increase in its water potential
c) The vapour pressure of the water in a solution is lower than that of pure water
d) When a solution is separated from water by a semi permeable membrane, water movement can be prevented by applying pressure to the solution

34. Match List I (Oxidation number) with List II (The element) and select the correct answer using the codes given below this lists: [2002]

List I (Oxidation number)	List II (The element)
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A. 2	1. Oxidation number of Mn in MnO_2
B. 3	2. Oxidation number of S in $\text{H}_2\text{S}_2\text{O}_7$
C. 4	3. Oxidation number of Ca in CaO_2
D. 6	4. Oxidation number of Al in NaAlH_4

Codes:

A B C D

- a) 3 4 1 2
- b) 4 3 1 2
- c) 3 4 2 1
- d) 4 3 2 1

35. Assertion (A): Synthetic detergents can lather well in hard water.: [2002]

Reason (R): Synthetic detergents form soluble calcium and magnesium salts with hard water.

- a) Both A and R are individually true and R is the correct explanation of A
- b) Both A and R are individually true but R is not a correct explanation of A
- c) A is true but R is false
- d) A is false but R is true

36. Assertion (A): A piece of copper and a piece of glass are heated to the same temperature. When touched, thereafter, the copper piece appears hotter than the glass piece.: [2001]

Reason (R): The density of copper is more than that of glass.

- a) Both A and R are individually true and R is the correct explanation of A
- b) Both A and R are individually true but R is NOT a correct explanation of A
- c) A is true but R is false
- d) A is false but R is true

37. When water is heated from 0°C to 10°C , its volume: [2001]

- a) Increases
- b) Decreases
- c) Does not change
- d) First decreases and then increases

38. Assertion (A): A Chemical reaction becomes faster at higher temperatures.: [2001]

Reason (R): At higher temperatures, molecular motion becomes more rapid. (

- a) Both A and R are individually true and R is the correct explanation of A
- b) Both A and R are individually true but R is NOT a correct explanation of A
- c) A is true but R is false
- d) A is false but R is true

39. Which one of the following is NOT radioactive? [2001]

- a) Astatine b) Francium
- c) Tritium d) Zirconium

40. Which one of the following is the correct sequence in increasing order of molecular weights of the hydrocarbons? [2001]

- a) Methane, ethane, propane and butane
- b) Propane, butane, ethane and methane
- c) Butane, ethane, propane and methane
- d) Butane, propane, ethane and methane

41. In an atom, the order of filling up of the orbitals is governed by: [2001]

- a) Aufbau principle
- b) Heisenberg's uncertainty principle
- c) Hund's rule
- d) Pauli's exclusion principle

42. An aqueous solution of copper sulphate is acidic in nature because the salt undergoes: [2001]

- a) Dialysis b) Electrolysis
c) Hydrolysis d) Photolysis

43. Consider the following statements with reference to the Periodic Table of chemical elements: [2001]

I. Ionisation potential gradually decreases along a period.

II. In a group of elements, electron affinity decreases as the atomic weight increases.

III. In a given period, electronegativity decreases as the atomic number increases.

Which of these statement(s) is/are correct? (

- a) I only b) II only
c) I and III d) II and III

44. Quartzite is metamorphosed from: [2001]

- a) Limestone b) Obsidian
c) Sandstone d) Shale

45. Most of the explosions in mines occur due to the mixing of: [2000]

- a) Hydrogen with oxygen
b) Oxygen with acetylene
c) Methane with air
d) Carbon dioxide with ethane

46. Match List I with List II and select the correct answer using the codes given below the lists: [2000]

List I	List II
I. German Silver	A) Tin
II. Solder	B) Nickel
III. Bleaching Powder	C) Sodium
IV. Hypo	D) Chlorine

Codes:

- a) I-A, II-B, III-D, IV-C
b) I-B, II-A, III-C, IV-D
c) I-A, II-B, III-C, IV-D
d) I-B, II-A, III-D, IV-C

47. Which one of the following materials is very hard and very ductile? [2000]

- a) Carborundum b) Tungsten
c) Cast iron d) Nichrome

48. Soft drinks such as colas contain significant quantities of: [2000]

- a) Caffeine b) Nicotine
c) Tannin d) Renin

49. Aluminium surfaces are often 'anodized'. This means the deposition of a layer of: [2000]

- a) Chromium oxide
b) Aluminium oxide
c) Nickel oxide
d) Zinc oxide

50. A small pouch containing silica gel is often found in bottles of medicine in tablet or powder form because silica gel: [2000]

- a) Kills bacteria
b) Kills germs and spores
c) Absorbs moisture
d) Absorbs all gases present inside the bottle

51. Match List I (Industrial processes) with List II (Industry with which associated) and select the correct answer using the codes given below the Lists: [2000]

List I	List II
I. Cracking	A) Rubber

II. Smelting	B) Petroleum
III. Hydrogenation	C) Copper
IV. Vulcanization	D) Edible fats

Codes:

- a) I-C, II-B, III-A, IV-D
- b) I-B, II-C, III-D, IV-A
- c) I-B, II-C, III-A, IV-D
- d) I-C, II-B, III-D, IV-A

52. Assertion (A): Large cold storage plants use ammonia as refrigerant while domestic refrigerators use chlorofluorocarbons.: [2000]

Reason (R): Ammonia can be liquified at ambient temperatures at low pressures.

- a) Both A and R are true, and R is the correct explanation of A
- b) Both A and R are true, but R is not a correct explanation of A
- c) A is true, but R is false
- d) A is false, but R is true

53. The stones formed in human kidney consist mostly of: [2000]

- a) Calcium oxalate
- b) Sodium acetate
- c) Magnesium sulphate
- d) Calcium

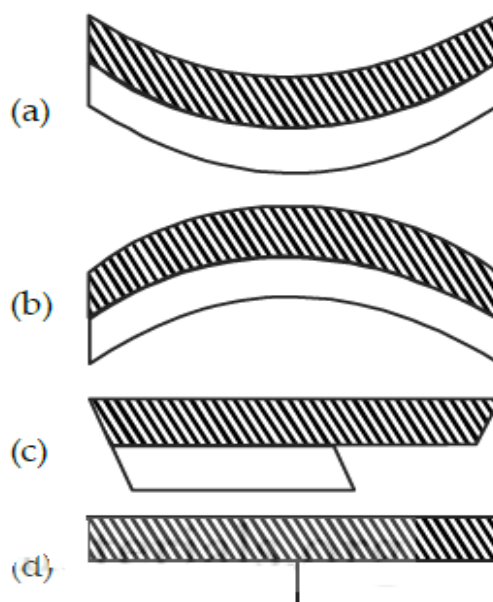
54. Consider the following:

Hard water is not suitable for: [2000]

- I. Drinking.
- II. Washing cloths with soap.
- III. Use in boilers.
- IV. Irrigating crops.

Which of these statements are correct?

- a) I and III
- b) II and III
- c) I, II and IV
- d) I, II, III and IV



55. Consider the following statements: An ordinary light bulb has a rather short life because the: [1999]

- I. Filament wire is not uniform.
 - II. Bulb cannot be evacuated completely.
 - III. Wires supporting the filament melt at high temperatures.
- Which of the above statements are correct?
- a) I and III
 - b) II and III
 - c) I and II
 - d) I, II and III

56. Match List I (Naturally occurring substances) with List II (Elements) and select the correct answer using the codes given below the Lists: [1999]

List I	List II
I. Diamond	A) Calcium
II. Marble	B) Silicon
III. Sand	C) Aluminium
IV. Ruby	D) Carbon

Codes:

- a) I-C, II-A, III-B, IV-D
- b) I-D, II-B, III-A, IV-C
- c) I-B, II-A, III-C, IV-D
- d) I-D, II-A, III-B, IV-C

57. Strips of two metals A and B are firmly joined together as shown in the figure.: [1999]



On heating, A expands more than B does. If this joined strip is heated, then it will appear as

58. Cobalt-60 is commonly used in radiation therapy because it emits: [1999]

- a) Alpha rays b) Beta rays
c) Gamma rays d) X-rays

59. Consider the following statements: Glass can be etched or scratched by: [1999]

- I. Diamond.
II. Hydrofluoric acid.
III. Aquaregia.
IV. Cone, sulphuric acid.

Which of these statements are correct?

- a) I and IV b) II and III
c) I and II d) II and IV

60. Assertion (A): To dilute sulphuric acid, acid is added to water and not water to acid.: [1999]

Reason (R): Specific heat of water is quite large.

- a) Both A and R are true, and R is the correct explanation of A
b) Both A and R are true, but R is not a correct explanation of A
c) A is true, but R is false
d) A is false, but R is true

61. Match List I with List II and select the correct answer using the codes given below the lists: [1998]

List I	List II
I. Potassium bromide	A) Fertiliser
II. Potassium nitrate	B) Photography
III. Potassium sulphate	C) Bakery
IV. Mono-potassium tartarate	D) Gunpowder

Codes:

- a) I-B, II-D, III-A, IV-C
b) I-B, II-D, III-C, IV-A
c) I-D, II-B, III-C, IV-A
d) I-D, II-B, III-A, IV-C

62. Consider the following statements: Coke is one of the materials of the charge added to blast furnace for the production of steel/iron. Its function is to: [1998]

- I. Act as a reducing agent.
II. Remove silica associated with the iron ore.
III. Function as fuel, to supply heat.
IV. Act as an oxidizing agent.

Of these statements:

- a) I and II are correct
b) II and IV are correct
c) I and III are correct
d) III and IV are correct

63. Which one of the following metals does not form amalgams? [1998]

- a) Zinc b) Copper
c) Magnesium d) Iron

64. Consider the following statements about acetylene: [1998]

- I. It is used in welding industry.
II. It is raw material for preparing plastics.

III. It is easily obtained by mixing silicon carbide and water.

Of these statements:

- a) I and II are correct
- b) I and III are correct
- c) II and III are correct
- d) I, II and III are correct

65. The major chemical compound found in human kidney stones is: [1998]

- a) Uric acid
- b) Calcium carbonate
- c) Calcium oxalate
- d) Calcium sulphate

66. Match List I with List II and select the correct answer using the codes given below the lists: [1998]

List I	List II
I. Blue vitriol	A) Sodium bicarbonate
II. Epsom salt	B) Sodium hydroxide
III. Baking soda	C) Magnesium sulphate
IV. Caustic soda	D) Copper sulphate

Codes:

- a) I-C, II-D, III-B, IV-A
- b) I-D, II-C, III-C, IV-A
- c) I-C, II-D, III-A, IV-B
- d) I-D, II-C, III-A, IV-B

67. Assertion (A): Formic acid is a stronger acid than acetic acid.: [1998]

Reason (R): Formic acid is an organic acid.

- a) Both A and R are true, and R is the correct explanation of A
- b) Both A and R are true, but R is NOT a correct explanation of A
- c) A is true, but R is false
- d) A is false, but R is true

68. Assertion (A): The temperature of a metal wire rises when an electric current is passed through it.: [1998]

Reason (R): Collision of metal atoms with each other releases heat energy.

- a) Both A and R are true, and R is the correct explanation of A
- b) Both A and R are true, but R is NOT a correct explanation of A
- c) A is true, but R is false
- d) A is false, but R is true

69. Assertion (A): Phenyl is used as a household germicide.: [1998]

Reason (R): Phenyl is a phenol derivative and phenol is an effective germicide.

- a) Both A and R are true, and R is the correct explanation of A
- b) Both A and R are true, but R is NOT a correct explanation of A
- c) A is true, but R is false
- d) A is false, but R is true

70. Assertion (A): Sodium metal is stored under kerosene.: [1998]

Reason (R): Metallic sodium melts when exposed to air.

- a) Both A and R are true, and R is the correct explanation of A
- b) Both A and R are true, but R is NOT a correct explanation of A
- c) A is true, but R is false
- d) A is false, but R is true

71. The characteristic odour of garlic is due to: [1997]

- a) A chloro compound
- b) A sulphur compound
- c) A fluorine compound
- d) Acetic acid

- 72. Which one of the following is an active component of oil of clove? [1997]**
a) Menthol b) Eugenol
c) Methanol d) Benzaldehyde
- 73. The most reactive among the halogens is: [1997]**
a) Fluorine b) Chlorine
c) Bromine d) Iodine
- 74. Which one of the following has the highest fuel value? [1997]**
a) Hydrogen b) Charcoal
c) Natural Gas d) Gasoline
- 75. Which one of the following is used as an anti-freeze for the automobile engines? [1997]**
a) Propyl alcohol
b) Ethanol
c) Methanol
d) Ethylene glycol
- 76. The offending substance in the liquor tragedies leading to blindness, etc. is: [1996]**
a) Ethyl alcohol
b) Amyl alcohol
c) Benzyl alcohol
d) Methyl alcohol
- 77. Which one of the following elements is alloyed with iron to produce steel which can resist high temperatures and also have high hardness and abrasion resistance? [1996]**
a) Aluminium
b) Chromium
c) Nickel
d) Tungsten
- 78. Which one of the following is a mixed fertilizer? [1995]**
a) CAM
b) Urea
c) Ammonium Sulphate
d) NPK
- 79. Which one of the following polymers is widely used for making bullet proof material? [1995]**
a) Polyvinyl chloride
b) Polyamides
c) Polyethylene
d) Polycarbonates
- 80. The chemical used as a 'fixer' in photography is: [1995]**
a) Sodium sulphate
b) Sodium thiosulphate
c) Ammonium persulphate
d) Borax
- 81. Which one of the following pairs of materials serves as electrodes in chargeable batteries commonly used in devices such as torchlights, electric shavers, etc? [1995]**
a) Nickel and cadmium
b) Zinc and carbon
c) Lead peroxide and lead
d) Iron and cadmium
- 82. 'Yellow cake', an item of smuggling across borders is: [1995]**
a) A crude form of heroin
b) A crude form of cocaine
c) Uranium oxide
d) Unrefined gold
- 83. 'The final Agent Orange raid in Vietnam took place in 1970;... areas have begun to bloom again. But 19 years after the war's**

end, it seems plain that Agent Orange is killing and maiming human beings, something it never intended to do. The apparent toxic fall out from those clouds ... is a crop of human miseries including cancers, miscarriages and birth defects—that may persist for decades.” The offensive substance referred to in the above quotation is: [1995]

a) DDT used as insecticide

- b) A complex mixture of herbicides and weedicides used to increase agricultural output in the then South Vietnam under the US aid programme
- c) A complex mixture of DDT and other insecticides used as aerial sprays for protection against malaria and other tropical diseases
- d) dioxin used as defoliant

Answers:

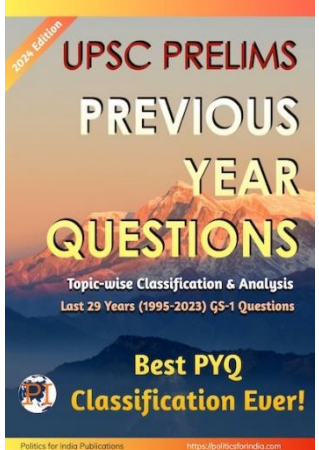
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
b	c	c	b	d	a	b	c	c	b	c	b	d	b	d	c	a	b

19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36
d	d	b	b	b	d	b	c	a	d	d	c	d	d	b	a	a	b

37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54
d	a	d	a	a	c	b	c	c	d	d	a	b	c	b	a	a	d

55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72
b	d	b	c	c	a	a	c	d	a	c	d	b	b	a	c	b	b

73	74	75	76	77	78	79	80	81	82	83
a	a	d	d	b	d	b	b	a	c	d



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