

STUDENT INN COACHING CENTER



# PPSC Lectureship Guide

Chemistry Past Papers

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2015

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# Lecturer Chemistry Mcqs PSC Past Paper

Lecturer Chemistry Mcqs PSC Past Paper

When an electron is brought from infinite distance close to the nucleus of the atom, the energy of Electron-nucleus system?

- (a) increases to a smaller negative value (b) decreases to a greater negative value  
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2) The probability of finding the electron in the nucleus is:

- (a) 100% due to forces of attraction (b) finite for all orbitals  
(c) Zero for all orbitals (d) Zero for some orbitals and finite for others

3) When Zn metal is kept in  $\text{CuSO}_4$  solution, copper is precipitated and  $\text{ZnSO}_4$  is formed because:

- (a) Atomic number of Zinc is smaller than copper  
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4) Electrolytes when dissolved in water, dissociate into their constituent ions, the degree of dissociation of an electrolyte increases with the:

- (a) Presence of a substance yielding common ion  
(b) Decreasing temperature  
(c) Decreasing concentration of electrolyte  
(d) Increasing concentration of electrolyte

5) There is a large positive entropy change for an exothermic reaction. It means that the reaction will be:

- (a) possible at high temperatures only (b) impossible at all temperatures  
(c) possible at low temperatures only (d) possible at all temperatures

6) Which of the following statement is false?

- (a) the temperature of the system will fall if an exothermic reaction is isolated from its surroundings  
(b) Energy is absorbed when one compound is converted into another with higher heat content  
(c) the temperature of the system is likely to fall if heat is absorbed during the course of a reaction  
(d) None of these

7)  $\text{pH} + \text{pOH}$  of a solution is:

- (a) 7 (b) Zero (c) 14 (d) -14

8) The compound that is not Lewis acid:

- (a)  $\text{BF}_3$  (b)  $\text{BaCl}_2$  (c)  $\text{SnCl}_4$  (d)  $\text{AlCl}_3$

9) Ore of Aluminium:

- (a) Calamine (b) Dolomite (c) Bauxite (d) Limestone

10) Oxidation number of S in sulphuric acid:

- (a) Four (b) Six (c) Two (d) Eight

11) d-block elements form coordination compounds because of:

- (a) Small Cationic size (b) Large ionic Charge  
(c) Unfilled d-orbitals (d) Filled d-orbitals

12) Brass is an alloy of:

- (a) Cu and Zn (b) Cu, Ni, Zn (c) Cu and Ni (d) Cu, Al, Zn

13) Urea is a high quality nitrogenous fertilizer with:

- (a) 76% nitrogen (b) 46% nitrogen (c) 66% nitrogen (d) 26% nitrogen

14) Diamond is:

- (a) Good conductor of electricity (b) Bad conductor of electricity  
(c) Bad conductor on heating (d) Good conductor on heating

15) Carbon monoxide is poisonous gas because it:

- (a) replaces oxygen from lungs (b) forms carboxy haemoglobin

- (c) Forms carbon dioxide with oxygen (d) has a sweet smell
16. Rust is:  
(a)  $\text{FeO} + \text{Fe(OH)}_2$  (b)  $\text{Fe}_2\text{O}_3 + \text{Fe(OH)}_2$  (c)  $\text{Fe}_2\text{O}_3$  (d)  $\text{Fe}_2\text{O}_3 + \text{Fe(OH)}_3$
- 17) Calcium Carbide reacts with water to give:  
(a) Methane (b) Ethylene (c) Acetylene (d) Ethane
18. Which of the following substituent deactivates benzene ring and is o, p-directing?  
(a)  $\text{NH}_2$  (b)  $\text{Cl}$  (c)  $\text{OCH}_3$  (d)  $\text{OH}$
- 19) Which of the following is most readily nitrated?  
(a) Toluene (b) Benzaldehyde (c) Nitrobenzene (d) Benzoic Acid
- 20) Ketones can be prepared by reaction of Grignard reagent with:  
(a) Acid Amides (b) Acid Chloride (c) Carboxylic Acid (d) Epoxides
- 21) Which of the following statements about the order of reaction is true?  
(a) The order of a reaction can only be determined by experiment.  
(b) A second order reaction is also bimolecular  
(c) The order of reaction must be a positive integer  
(d) The order of reaction increases with increasing temperature.
- 22 Polysaccharides yield many monosaccharides on:  
(a) Hydration (b) Oxidation (c) Reduction (d) Hydrolysis
- 23) Which of the following is not aromatic?  
(a) Benzene (b) cyclooctatetraene (c) Pyridine (d) Phenol
- 24) Which of the following is most basic?  
(a)  $\text{H}_2\text{O}$  (b)  $\text{NH}_3$  (c)  $\text{CH}_3\text{NH}_2$  (d)  $\text{CH}_3\text{OH}$
- 25) Which of the following has lowest pH?  
(a)  $\text{CH}_3\text{COOH}$  (b)  $\text{CF}_3\text{COOH}$  (c)  $\text{ClCH}_2\text{COOH}$  (d)  $\text{Cl}_3\text{C COOH}$
- 26) The equilibrium of two readily interconvertible isomers is called:  
(a) Stereoisomerism (b) Metamerism (c) Tautomerism (d) Polymorphism
- 27) Which of the following compounds exhibit geometrical isomerism?  
(a) 1-Pentene (b) 2-Pentene (c) 2-methyl -2-Pentene (d) 2-methyl -2-Butene
- 28) Which of the following gives a tertiary alcohol when treated with Grignard reagent:  
(a)  $\text{HCHO}$  (b)  $\text{CH}_3\text{CHO}$  (c)  $\text{C}_3\text{H}_5\text{CHO}$  (d)  $\text{CH}_3\text{COCH}_3$
- 29) Which of the following tests is not used to identify aldehydes?  
(a) Tollen's test (b) Benedict solution test (c) Fehling solution test (d) Ammonia test
- 30) Which is incorrect about alkaloids?  
(a) Naturally Occuring (b) Possess a hetrocyclic ring  
(c) Exhibit biological action (d) acidic in nature
- 31) Which of the followings will not give iodoform test:  
(a) Acetone (b) Ethylalcohol (c) Benzaldehyde (d) Acetaldehyde
- 32) The reaction of aniline with bromine water gives:  
(a) o-bromoaniline (b) p-bromoaniline (c) 2,4-dibromoaniline (d) 2,4,6-tribromoaniline
- 33) The reaction of tripalmitin, with sodium hydroxide is called:  
(a) Hydrolysis (b) Saponification (c) Esterification (d) Combustion
- 34) Which one is not Petrochemical?  
(a) Napthalene (b) Mineral Oil (c) Wax (d) Table Salt
- 35) Chemical adsorption:  
(a) is exothermic (b) is irreversible (c) takes place at high temp. (d) All of these
- 36) The most commonly used absorbent for chromatographic separation of organic compound is:  
(a) Activated charcoal (b) Fuller's Earth (c) Alumina (d) Silica gel
- 37) Grignard reagent is:  
(a) Organo Zinc halide (b) Organo cadmium bromide  
(c) n-Butyl Lithium (d) Organo Magnesium halide
- 38) Which one of the following is not a petrochemical.  
(a) Cumene (b) Paraffin (c) Aluminum Chloride (d) Epoxy resin

- 39) The term syndiotactic is related to which one of the following?  
 (a) Synthetic detergents (b) Table Salt (c) Paraffin (d) Polypropylene
- 40) Which one of the following is used as an Antibiotic?  
 (a) Patulin (b) Insulin (c) Soserine (d) Trypsin
- 41) Heroin is diacetate of:  
 (a) Papaverine (b) Morphine (c) Codeine (d) Thebaine
- 42) A reaction that practically is given by all organic compounds.  
 (a) Elimination (b) Friedel-Craft acylation (c) Combustion (d) Rearrangement
- 43) Which functional group is present in polyester shirt?  
 (a) Lactam (b) Acid Chloride (c) Ether (d) Ester
- (xviii) Which statement is true for Halogen (Halo-group)?  
 (a) Activating and O, p-directing (b) Activating and m-directing  
 (c) Deactivating and O, p-directing (d) None of these.
- (44) Which one of the following can be synthesized from Aryl Diazonium Salt?  
 (a) Furfural (b) Carbylamine (c) Biphenyl (d) THF
- (45) The Methyl group in Methyl Magnesium Iodide can act as:  
 (a) CH<sub>3</sub> Radical (b) CH<sub>3</sub> Carbonium ion (c) CH<sub>3</sub> Carbanion (d) Can react with a base
- 46) Nylon is a copolymer of:  
 (a) Urea and Formaldehyde (b) Phenol and Formaldehyde  
 (c) Hexamethylenediamine and adipic acid (d) Vinyl Chloride and Vinylalcohol
- (47) Which of the following would react with one mole of Grignard's reagent to yield a ketone?  
 (a) R R CON'''' (b) R R CONH' (c) R CONH<sub>2</sub> (d) R COOH
- 48) Glyceraldehyde has one of the following properties:  
 (a) One asymmetric carbon atom (b) Two asymmetric carbon atoms  
 (c) A meso compound (d) Four asymmetric carbon atoms
- 49) The antifreeze compound ethylene glycol has the formula:  
 (a) C<sub>2</sub>H<sub>5</sub>OH (b) CH<sub>3</sub>OH (c) C<sub>2</sub>H<sub>4</sub>(OH)<sub>2</sub> (d) C<sub>3</sub>H<sub>5</sub>(OH)<sub>3</sub>
- 50) Distillation is the best method for separating the two substances in which of the following:  
 (a) Water and salt dissolved  
 (b) water and a substance which does not dissolve in it  
 (c) Two liquids that have different boiling points  
 (d) Two solids that have different melting points.

## Chemistry Mcqs Test

### Chemistry Mcqs Test

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- (d) None of these

(vii) The H\_\_\_\_\_ bond is strongest in:

- (a) S-H .....O
- (b) O-H .....S
- (c) F-H .....O
- (d) F-H .....S

(viii) Heavy water contains:

- (a) Large amount of salts
- (b) Deuterium
- (c)  $\text{O}^{18}$
- (d)  $\text{O}^{16}$

(ix)  $\text{pH} + \text{pOH}$  of a solution is:

- (a) 7
- (b) Zero
- (c) 14
- (d) -14

(x) The compound that is not Lewis acid:

- (a)  $\text{BF}_3$
- (b)  $\text{BaCl}_2$

- (c)  $\text{SnCl}_4$
- (d)  $\text{AlCl}_3$

(xi) Strongest acid having  $K_a$ :

- (a) 104
- (b)  $10^{-4}$
- (c) 1
- (d)  $10^{-2}$

(xii) Ore of Aluminium:

- (a) Calamine
- (b) Dolomite
- (c) Bauxite
- (d) Limestone

(xiii) Oxidation number of S in sulphuric acid:

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(xvi) Urea is a high quality nitrogenous fertilizer with:

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- (c)  $\text{Fe}_2\text{O}_3$
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(xx) Calcium Carbide reacts with water to give:

- (a) Methane
- (b) Ethylene
- (c) Acetylene
- (d) Ethane

## Chemistry Mcqs Test Preparation

Chemistry Mcqs Test Preparation

1. The naturally occurring process proceed with the
  - a. Increase of energy
  - b. decrease of energy
  - c. none of these
  - d. both of these
2. If the heat content of B is greater than that of A, the reaction  $\text{A} \rightarrow \text{B}$  is
  - a. Endothermic
  - b. Exothermic
  - c. Instantaneous
  - d. Spontaneous
3. The entropy of universe
  - a. Tends towards a Max
  - b. Tends towards Min
  - c. Tends to zero
  - d. Remain constant
4. The exothermic process is
  - a. evaporation
  - b. sublimation
  - c. respiration
  - d. boiling
5. K.E of molecules of gaseous substance is due to
  - a. vibrational energy
  - b. translational energy
  - c. rotational energy
  - d. sum of all these
6. spontaneous reactions are

- a.reversible
- b.irreversible
- c.none of these
- d.not irreversible

7.For the reaction  $\text{NaOH}+\text{HCl} \longrightarrow \text{NaCl}+\text{H}_2\text{O}$  the enthalpy change is called

- a.heat of formation of water
- b.heat of formation of NaCl
- c.heat of neutralization
- d.heat of reaction

8.At constant volume  $q_v$  is=

- a. $\Delta H$
- b. $\Delta E$
- c. $\Delta P$
- d. $\Delta V$

9. The first law of thermodynamics is merely the law of

- a.conservation of mass
- b.conservation of energy
- c.conservation of mass & energy

10. In a bomb calorimeter the reactions are carried out at

- a.constant volume
- b.constant temperature
- c.constant pressure
- d.keeping all parameters

11. The net change in a chemical reaction is same whether it takes place directly or indirectly is

- a. Henry's law
- b. Charle's law
- c. Hess's law
- d. Graham's law

12. Heat of reaction depends on

- a.pressure
- b.volume
- c.temperature
- d.all of above

13. The process of evaporation of liquid is accompanied by

- a.decrease in enthalpy
- b.decrease in entropy
- c.increase in enthalpy
- d.no change in free energy

14. Which thermodynamic property provides a measure of randomness in system?

- a.enthalpy
- b.entropy
- c.free energy
- d.density

15. Which of the following is not a state function

- a. enthalpy
- b. work
- c. entropy
- d. internal energy

16. Bond breaking process is

- a. exothermic
- b. endothermic
- c. some exothermic and some endothermic
- d. no energy change

17. In exothermic reaction, when heat is given out the temperature of the system

- a. increases
- b. decreases
- c. remain same
- d. same at room temperature

18. Internal energy is sum of

- a. K.E & heat energy
- b. K.E only
- c. K.E, P.E, vibrational, rotational
- d. none of above

19. In which of the following neutralization reaction, will the heat of neutralization be highest?

- a.  $\text{NH}_4\text{OH}$  &  $\text{H}_2\text{SO}_4$
- b.  $\text{HCl}$  &  $\text{NaOH}$
- c.  $\text{CH}_3\text{COOH}$  &  $\text{KOH}$
- d.  $\text{CH}_3\text{COOH}$  &  $\text{NH}_4\text{OH}$

20. When a solid is converted into liquid entropy

- a. becomes zero
- b. decrease
- c. increase
- d. remains the same

21. Consider a chemical reaction  $\text{CO}_2(\text{l}) \rightarrow \text{CO}_2(\text{g})$  (endothermic)  
the enthalpy change

- a.  $\Delta H < \text{zero}$
- b.  $\Delta H > \text{zero}$
- c.  $\Delta H = \text{zero}$
- d. none

22. Which change would have the negative value of  $\Delta H$

- a.  $\text{Na}(\text{s}) \rightarrow \text{Na}(\text{g})$
- b.  $\text{Cl}(\text{g}) + \text{e}^- \rightarrow \text{Cl}^{-1}(\text{g})$
- c.  $\text{Na}(\text{s}) \rightarrow \text{Na}^{+1}(\text{g}) + \text{e}^-$
- d.  $\text{Cl}_2(\text{g}) \rightarrow 2\text{Cl}(\text{g})$

23. A spontaneous change is one in which the system suffers

- a. increase in internal energy
- b. lowering of free energy
- c. lowering of entropy
- d. no energy change

24. which of the following gases has the highest heat of combustion?
- Methane
  - Ethane
  - Ethylene
  - Acetylene
25. Which of the following is not application for a thermo chemical reaction?
- It tells about the physical state of reactants and products.
  - it tells whether a reaction is exothermic or endothermic
  - it tells about the allotropic form(if any) of the reactant
  - it tells whether a reaction is possible or not.

**Answer Key:** 1b , 2a, 3a, 4c, 5d, 6b, 7c, 8b, 9b,10a, 11c, 12d, 13c, 14b, 15b, 16b, 17a, 18c, 19b, 20c, 21b, 22b, 23b, 24b, 25d

## Chemistry Mcqs Paper For Public Service Commission Exam

### Chemistry Mcqs Paper for Public Service Commission Exam

#### Periodic Classification of Elements

- \_\_\_\_\_ elements have been discovered so far.  
(100, 110, 120, 150)
- so far 110 elements have been discovered. Out of these \_\_\_\_\_ elements are naturally occurring.  
(100, 96, 92, 94)
- \_\_\_\_\_ classified the then known elements into metals, non metals and their derivatives.  
(Dobereiner, Al-Razi, Newlands, Mendeleev)
- In 1817, a German chemist, \_\_\_\_\_ made use of the idea of relationship between atomic weights and properties of elements for the classification of elements.  
(Dobereiner, Al-Razi, Newlands, Mendeleev)
- \_\_\_\_\_ presented the law of triads.  
(Dobereiner, Al-Razi, Newlands, Mendeleev)
- Dobereiner's work led to the law of triads which states that \_\_\_\_\_.  
(Atomic weight of any one element was found to be approximately the mean of the other two elements of triad, Atomic weight of the middle element was found to be approximately the mean of the other two elements of a triad, Atomic number of any one element was found to be approximately the mean of the other two elements of a triad, Atomic number of the middle element was found to be approximately the mean of the other two elements of triad)
- The law of octaves was given by \_\_\_\_\_.  
(Dobereiner, Al-Razi, Newlands, None of these)
- Law of octaves states that \_\_\_\_\_.  
(The properties of every 6th element from the given one were similar to the first, the

properties of every 9th element from the given one were similar to the first, the properties of every 8th element from the given one were similar to the first, the properties of every 7th element from the given one were similar to the second)

9. "Physical and chemical properties of elements are periodic functions of their atomic weight." This is called \_\_\_\_\_.

(Dobereiner's Law of Triads, Newlands' Law of Octaves, Mendeleev's Periodic Law, None of these)

10. Lothar Meyer arranged the elements in order of their increasing atomic weights and found that \_\_\_\_\_.

(Physical properties of the elements were the periodic function of their atomic weights, chemical properties of the elements were the periodic function of their atomic number, physical properties of the elements were the periodic function of their atomic number, chemical properties of the elements were periodic function of their atomic weights)

11. Mendeleev's Periodic table was based on \_\_\_\_\_.

(Atomic number, Atomic mass, Atomic volume, Electronic Configuration)

12. Mendeleev formulated a rule for the classification of elements and concluded that \_\_\_\_\_.

(Physical and chemical properties of the elements are periodic functions of their atomic numbers, physical and chemical properties of the elements are periodic functions of their atomic weights, physical properties of the elements are periodic function of their atomic weights, Chemical properties of the elements are periodic functions of their atomic numbers)

13. Modern Classification of elements is based on \_\_\_\_\_.

(Dobereiner's law of Triads, Newlands' law of Octaves, Mendeleev's Periodic Table, None of these)

14. Excluding H and He, the smallest element in the periodic table is \_\_\_\_\_.

(Lithium, Fluorine, Cesium, Iodine)

15. "Physical and chemical properties of elements are the periodic functions of their atomic numbers." This is called \_\_\_\_\_.

(Law of Triads, Law of Octaves, Periodic Law, None of these)

16. Moseley's work led to the periodic law, which states that \_\_\_\_\_.

(the number of the electrons in the 1s energy level increases as the atomic number increases, The properties of the elements are a periodic function of their atomic masses, The x-rays spectra of the elements are more complex than the optical spectra, The properties of elements are the periodic function of their atomic number)

17. A pair of elements in the same family in the periodic table classification is \_\_\_\_\_.

(Chlorine and carbon, calcium and aluminium, nitrogen and neon, sodium and potassium)

18. In the period, the elements are arranged in strict sequence in order of \_\_\_\_\_.

(Increasing charges in the nucleus, increasing atomic weight, increasing number of electrons in valence shell, increasing valency)

19. Most of the known elements are metals of \_\_\_\_\_ of periodic table.

(d-block, p-block, III-group, Zero block)

20. \_\_\_\_\_ reflects combining capacity of an element.

(Valency, atomic number, ionization energy, ionization potential)

21. As we move from left to right in second period of the periodic table, the gram atomic volume of the elements \_\_\_\_\_.

(Increases at a constant rate, remains unchanged, decreases, will change indefinitely)

22. The volume in cubic centimeters occupied by one gram atom of the element is called \_\_\_\_\_.

(Atomic Volume, Atomic weight, Mass number, None of these)

23. In a \_\_\_\_\_, atomic volume increases with atomic number, from top to bottom, as new shells are added up with increase in atomic number.

(Group, Period, Sub-group, None of these)

24. \_\_\_\_\_ of the following is a transition element.  
(Ni, Rb, Al, As)
25. On moving from left to right across a period in the periodic table, the size of atom generally \_\_\_\_\_.  
(decreases, increases, remains constant, decreases up to IV A group and then increases)
26. The amount of energy required to remove an electron from an atom of an element in the gaseous state I called \_\_\_\_\_.  
(Ionization Potential, Ionization energy, Electron volt, both a and b)
27. Each vertical row of the periodic table includes elements with chemical characteristics that are in general \_\_\_\_\_.  
(identical, similar, different, sometimes identical and sometimes different)
28. The ionization energy \_\_\_\_\_ in a group from top to bottom with the increase in atomic size.  
(Increases, decreases, remains constant, none of these)
29. The lowest ionization energies are found in the \_\_\_\_\_.  
(inert gases, alkali metals, Transition elements, Halogens)
30. Ionization energy is lowest for \_\_\_\_\_.  
(Inert gases, alkali metals, halogens, alkaline earth metals)
31. In the periodic table, the highest ionization energies are for \_\_\_\_\_.  
(Halogens, Noble gases, Alkali metals, Chalcogens)
32. The atomic weight of an element divided by its density is called \_\_\_\_\_.  
(Atomic mass, Atomic volume, Atomic density, Atomic number)
33. Elements in the same family \_\_\_\_\_.  
(have same atomic number, have the same molecular weight, have similar chemical properties, constitute a group of elements with the same electronic configuration)
34. In a given period, the alkali metals have \_\_\_\_\_.  
(smallest atomic size, lowest ionization energy, lowest density, highest electron affinity)
35. Of the following given elements \_\_\_\_\_ atom has the highest ionization energy.  
(Be, F, N, Ne)
36. The value of ionization energy \_\_\_\_\_ in a period from left to right due to the decrease in atomic size.  
(increases, decreases, remains constant, None of these)
37. \_\_\_\_\_ is the most electronegative element.  
(Fluorine, Iodine, Oxygen, Sodium)

## Chemistry Mcqs for All Public Service Exams

The temperature at which a gas liquefies under 1 atm of pressure is called the

**SELECT APPROPRIATE ANSWER FROM FOLLOWING**

- critical temperature
- boiling point
- normal boiling point
- triple point

**A real gas is one in which:**

**SELECT APPROPRIATE ANSWER FROM FOLLOWING**

- gases shows deviation from gas laws
- volume of the molecules become significant
- attraction between molecules exists
- All are correct

**The mechanism of the dehydration of an alkene involves**

**SELECT APPROPRIATE ANSWER FROM FOLLOWING**

- carbanion formation
- hydride ion transfer
- free radical formation
- carbonium ion formation

**Elements with same electronic configuration in their outermost occupies energy level have**

**SELECT APPROPRIATE ANSWER FROM FOLLOWING**

- Different physical and chemical properties
- Same physical and chemical properties
- similar physical and chemical properties
- same atomic radii

**The formula which represent the simplest ratio of atom is:**

**SELECT APPROPRIATE ANSWER FROM FOLLOWING**

- Molecular formula
- Empirical formula
- Structural formula
- none of the above

**Molecule in which the disteen between the two adjectve carbon atoms is largest is:**

**SELECT APPROPRIATE ANSWER FROM FOLLOWING**

- ethane
- ethene
- ethyne
- benzene

**Which of the following atoms would be dimagnetic:**

**SELECT APPROPRIATE ANSWER FROM FOLLOWING**

- O
- Al

K  
Ne

**Astatine is the element below iodine in group.VII of the periodic table.which one of the following predictions about chemistry of astatine and its compounds id likelyto be correct**

**SELECT APPROPRIATE ANSWER FROM FOLLOWING**

Asfatine is a solid at room temperature  
Astatine is more reactive than iodine  
Hydrogen astatide is a weak acid  
Hydrogen astatide is thermally stable

**Which is the sweetest of all the suger?**

**SELECT APPROPRIATE ANSWER FROM FOLLOWING**

fructose  
glucose  
lactose  
sucrose

**IF gasses is cooled suddenly then it becomes**

**SELECT APPROPRIATE ANSWER FROM FOLLOWING**

brittle  
malleable  
soft  
transparent

**Enthalpy is a/ an:**

**SELECT APPROPRIATE ANSWER FROM FOLLOWING**

extensive property  
intensive property  
state function  
A & B are correct

**Presence of hydrogen bonding between molecules of a substance result:**

**SELECT APPROPRIATE ANSWER FROM FOLLOWING**

increase in melting point  
increase in density  
slow the rate of evaporation  
all fo the above

**Dry ice is**

**SELECT APPROPRIATE ANSWER FROM FOLLOWING**

- ice which has been dried with the help of filter paper
- solid carbon dioxide
- solid sulphur dioxide
- ice found on mountains

**A system interacts readily with its surrounding, exchanging matter and energy; the system is:**

**SELECT APPROPRIATE ANSWER FROM FOLLOWING**

- an open system
- a closed system
- an isolated system
- None of these

**Chemical composition of pearl is:**

**SELECT APPROPRIATE ANSWER FROM FOLLOWING**

- calcium carbonate
- calcium sulphate
- calcium carbonate and magnesium carbonate
- calcium chloride

**Which compound has the highest boiling point?**

**SELECT APPROPRIATE ANSWER FROM FOLLOWING**

- HI
- HBr
- HCL
- HF.

**Sodium ions do not react with water since:**

**SELECT APPROPRIATE ANSWER FROM FOLLOWING**

- they are positively charged
- they possess a stable electrons configuration
- they are soluble in water
- they are chemically unreactive

**Oxygen atom in R. O. R has ..... unshared electrons pair.**

**SELECT APPROPRIATE ANSWER FROM FOLLOWING**

- one
- two

three  
four

..... bond is formed due to parallel overlapping of atomic orbital is:

**SELECT APPROPRIATE ANSWER FROM FOLLOWING**

sigma bond  
pi bond  
super bond  
ionic bond

**Which of the following is used for the manufacture of synthetic petroleum**

**SELECT APPROPRIATE ANSWER FROM FOLLOWING**

aromatisation  
cracking  
fischer-tropsch process  
fractional distillation

**Calculate the percentage of oxygen in heavy water?**

**SELECT APPROPRIATE ANSWER FROM FOLLOWING**

80%  
60%  
50%  
20%

**Which of the following groups have + I group**

**SELECT APPROPRIATE ANSWER FROM FOLLOWING**

Alkyl  
Halogen  
Phenyl  
Nitro

**One can ignore attractive forces and size effect in a gase at:**

**SELECT APPROPRIATE ANSWER FROM FOLLOWING**

high pressure  
low temperature  
low temperature and high temperature  
low temperature and high pressure

15 liters of hydrogen combine with nitrogen to produce ammonia. the volume of ammonia in litres formed is:

**SELECT APPROPRIATE ANSWER FROM FOLLOWING**

- 10 liters
- 5 liters
- 8 liters
- 12 liters

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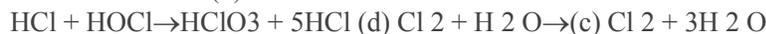
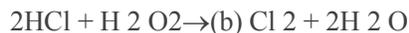
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- Hydrogen astatide is thermally stable

## Chemistry Mcqs for CSS & PSC Exams



- (i) The geometry associated with  $sp^3d^2$  hybridization is:  
 (a) Octahedral (b) Tetrahedral (c) Trigonal planar (d) Trigonal bipyramidal
- (ii) Which of the following molecules has a dipole moment?  
 (a)  $CH_4$  (b)  $CO_2$  (c)  $H_2O$  (d)  $CCl_4$
- (iii) Which of the following represents the shape of  $NH_3$  molecule?  
 (a) Trigonal planar (b) Angular (c) Trigonal Pyramidal (d) Tetrahedral
- (iv) Which of the following is the largest ion?  
 (a)  $Na^+$  (b)  $Rb^+$  (c)  $Cs^+$  (d)  $Li^+$
- (v) Which of the following represent different isotopes of the same element?  
 1. 12 protons, 11 neutrons, 12 electrons  
 2. 11 protons, 12 neutrons, 11 electrons  
 3. 10 protons, 12 neutrons, 12 electrons  
 4. 11 protons, 12 neutrons, 10 electrons  
 5. 12 protons, 12 neutrons, 12 electrons  
 (a) 1 and 5 (b) 2 and 4 (c) 2, 3, 4 and 5 (d) None of these
- (vi) Which of the following represents the correct number of particles in  $^{79}_{34}Se$ ?  
 (a) 34 protons, 79 neutrons, 2 electrons (b) 34 protons, 45 neutrons, 32 electrons  
 (c) 34 protons, 45 neutrons, 2 electrons (d) 34 protons, 45 neutrons, 36 electrons
- (vii) Which one of the following is correct equation for the reaction of chlorine with water?  
 (a)  
 $2HCl + H_2O \rightarrow 2Cl + H_2O$   
 2

1

O<sub>2</sub>

(ix) When Pt and Co are electrically connected, which one is corroded:

(a) Pt (b) Co (c) Both of these (d) None of these

+Cu), which of the following statements is correct? + Zn  $\rightarrow$  + (x) For the reaction (Zn + Cu  $\rightarrow$

(a) Zn is dissolved and Cu is deposited (b) Cu is reduced and Zn is oxidized

(c) Cu is the cathode and Zn the anode (d) All statements are correct

(xi) What is the pH of 0.0001 M NaOH solution?

(a) 4 (b) 10 (c) 5 (d) 14

3M HCl solution? (xii) What is the pH of  $1.0 \times 10^{-3}$

(a) 10 (b) 30 (c) 3 (d) 0.3

(xiii) Which of the following is the correct equilibrium expression for the reaction

$[\text{N}_2(\text{g}) + 3\text{H}_2(\text{g}) \rightleftharpoons 2(\text{NH}_3(\text{g}))]$  ?

(a)  $\frac{[\text{NH}_3]^2}{[\text{N}_2][\text{H}_2]^3}$  (b)  $\frac{[\text{NH}_3]^2}{[\text{N}_2][\text{H}_2]^3}$

(c)  $\frac{[\text{NH}_3]^2}{[\text{N}_2][\text{H}_2]^3}$  (d)  $\frac{[\text{NH}_3]^2}{[\text{N}_2] + [\text{H}_2]^3}$

(xiv) Which of the following best describes how a catalyst works?

(a) It changes the potential energies of the reactants and products.

(b) It decreases the temperature of the reaction which leads to a faster rate.

(c) It lowers the activation energy for the reaction by providing a different reaction mechanism.

(d) It raises the activation energy for the reaction which produces a faster rate.

(xv) Which of the following will not act as Lewis acid;

(a)  $\text{AlCl}_3$

(b)  $\text{BF}_3$

(c)  $\text{FeBr}_3$

(d)  $\text{CCl}_4$

(xvi) Which of the following is the strongest acid?

(a) HF (b) HCl (c) HBr (d) HI

(xvii) Which of the following could be used for cathodic protection:

(a) Al (b) Cd (c) Cu (d) None of these

(xviii) Hybridization of  $\text{XeF}_4$  is:

(a)  $sp^3d$  (b)  $sp^2d^2$  (c)  $sp^3d^2$  (d)  $sp^3$

(xix) Which of the following will increase the rate of the reaction?

(a) Decreased temperature and increased concentration of reactants

(b) Decreased temperature and decreased concentration of reactants

(c) Increased temperature and decreased concentration of reactants

(d) Increased temperature and increased concentration of reactants

(xx) Silicones are polymeric substances with linkage:

(a)  $\text{Si}-\text{S}-\text{Si}$  (b)  $\text{Si}-\text{O}-\text{Si}$  (c)  $\text{Si}(\text{CH}_3)_4$

(d)  $\text{O}=\text{Si}=\text{O}$

# Chemistry Mcqs For Lecturer & Subject Specialist Exams

(i) When an electron is brought from infinite distance close to the nucleus of the atom, the energy of Electron-nucleus system?

- (a) increases to a smaller negative value
- (b) decreases to a greater negative value
- (c) decreases to a smaller positive value
- (d) increases to a greater positive value

(ii) The probability of finding the electron in the nucleus is:

- (a) 100% due to forces of attraction
- (b) finite for all orbitals
- (c) Zero for all orbitals
- (d) Zero for some orbitals and finite for others

(iii) When Zn metal is kept in  $\text{CuSO}_4$  solution, copper is precipitated and  $\text{ZnSO}_4$  is formed because:

- (a) Atomic number of Zinc is smaller than copper
- (b) Atomic number of Zinc is larger than copper
- (c) Standard reduction potential of Zinc is more than that of copper
- (d) Standard reduction potential of Zinc is less than that of copper

(iv) Electrolytes when dissolved in water, dissociate into their constituent ions, the degree of dissociation of an electrolyte increases with the:

- (a) Presence of a substance yielding common ion
- (b) Decreasing temperature
- (c) Decreasing concentration of electrolyte
- (d) Increasing concentration of electrolyte

(v) There is a large positive entropy change for an exothermic reaction. It means that the reaction will be:

- (a) possible at high temperatures only
- (b) impossible at all temperatures
- (c) possible at low temperatures only
- (d) possible at all temperatures

(vi) Which of the following statement is false?

- (a) the temperature of the system will fall if an exothermic reaction is isolated from its surroundings
- (b) Energy is absorbed when one compound is converted into another with higher heat content
- (c) the temperature of the system is likely to fall if heat is absorbed during the course of a reaction
- (d) None of these

(vii) The H\_\_\_\_\_ bond is strongest in:

- (a) S-H .....O
- (b) O-H .....S
- (c) F-H .....O
- (d) F-H .....S

(viii) Heavy water contains:

- (a) Large amount of salts
- (b) Deuterium
- (c) O18
- (d) O16

(ix)  $\text{pH} + \text{pOH}$  of a solution is:

- (a) 7
- (b) Zero
- (c) 14
- (d) -14

(x) The compound that is not Lewis acid:

- (a)  $\text{BF}_3$
- (b)  $\text{BaCl}_2$
- (c)  $\text{SnCl}_4$
- (d)  $\text{AlCl}_3$

(xi) Strongest acid having  $K_a$ :

- (a) 104
- (b)  $10^{-4}$
- (c) 1
- (d)  $10^{-2}$

(xii) Ore of Aluminium:

- (a) Calamine
- (b) Dolomite
- (c) Bauxite
- (d) Limestone

(xiii) Oxidation number of S in sulphuric acid:

- (a) Four
- (b) Six
- (c) Two
- (d) Eight

(xiv) d-block elements form coordination compounds because of:

- (a) Small Cationic size
- (b) Large ionic Charge
- (c) Unfilled d-orbitals
- (d) Filled d-orbitals

(xv) Brass is an alloy of:

- (a) Cu and Zn
- (b) Cu, Ni, Zn
- (c) Cu and Ni
- (d) Cu, Al, Zn

(xvi) Urea is a high quality nitrogenous fertilizer with:

- (a) 76% nitrogen
- (b) 46% nitrogen
- (c) 66% nitrogen
- (d) 26% nitrogen

(xvii) Diamond is:

- (a) Good conductor of electricity
- (b) Bad conductor of electricity
- (c) Bad conductor on heating
- (d) Good conductor on heating

(xviii) Carbon monoxide is poisonous gas because it:

- (a) replaces oxygen from lungs
- (b) forms carboxy haemoglobin
- (c) Forms carbon dioxide with oxygen
- (d) has a sweet smell

(xix) Rust is:

- (a)  $\text{FeO} + \text{Fe(OH)}_2$
- (b)  $\text{Fe}_2\text{O}_3 + \text{Fe(OH)}_2$
- (c)  $\text{Fe}_2\text{O}_3$
- (d)  $\text{Fe}_2\text{O}_3 + \text{Fe(OH)}_3$

(xx) Calcium Carbide reacts with water to give:

- (a) Methane
- (b) Ethylene
- (c) Acetylene
- (d) Ethane

(i) Which of the following substituent deactivates benzene ring and is o, p-directing?

- (a)  $\text{NH}_2$
- (b)  $\text{Cl}$
- (c)  $\text{OCH}_3$
- (d)  $\text{OH}$

(ii) Which of the following is most readily nitrated?

- (a) Toluene
- (b) Benzaldehyde
- (c) Nitrobenzene
- (d) Benzoic Acid

(iii) Ketones can be prepared by reaction of Grignard reagent with:

- (a) Acid Amides
- (b) Acid Chloride
- (c) Carboxylic Acid
- (d) Epoxides

- (iv) Which of the following statements about the order of reaction is true?
- (a) The order of a reaction can only be determined by experiment.
  - (b) A second order reaction is also bimolecular
  - (c) The order of reaction must be a positive integer
  - (d) The order of reaction increases with increasing temperature.
- (v) Polysaccharides yield many monosaccharides on:
- (a) Hydration
  - (b) Oxidation
  - (c) Reduction
  - (d) Hydrolysis
- (vi) Which of the following is not aromatic?
- (a) Benzene
  - (b) cyclooctatetraene
  - (c) Pyridine
  - (d) Phenol
- (vii) Which of the following is most basic?
- (a)  $\text{H}_2\text{O}$
  - (b)  $\text{NH}_3$
  - (c)  $\text{CH}_3\text{NH}_2$
  - (d)  $\text{CH}_3\text{OH}$
- (viii) Which of the following has lowest pH?
- (a)  $\text{CH}_3\text{COOH}$
  - (b)  $\text{CF}_3\text{COOH}$
  - (c)  $\text{ClCH}_2\text{COOH}$
  - (d)  $\text{Cl}_3\text{C COOH}$
- (ix) The equilibrium of two readily interconvertible isomers is called:
- (a) Stereoisomerism
  - (b) Metamerism
  - (c) Tautomerism
  - (d) Polymorphism
- (x) Which of the following compounds exhibit geometrical isomerism?
- (a) 1-Pentene
  - (b) 2-Pentene
  - (c) 2-methyl -2-Pentene
  - (d) 2-methyl -2-Butene
- (xi) Which of the following gives a tertiary alcohol when treated with Grignard reagent:
- (a)  $\text{HCHO}$
  - (b)  $\text{CH}_3\text{CHO}$
  - (c)  $\text{C}_3\text{H}_5\text{CHO}$
  - (d)  $\text{CH}_3\text{COCH}_3$

(xii) Which of the following tests is not used to identify aldehydes?

- (a) Tollen's test
- (b) Benedict solution test
- (c) Fehling solution test
- (d) Ammonia test

(xiii) Which is incorrect about alkaloids?

- (a) Naturally Occuring
- (b) Possess a hetrocyclic ring
- (c) Exhibit biological action
- (d) acidic in nature

(xiv) Which of the followings will not give iodoform test:

- (a) Acetone
- (b) Ethylacohol
- (c) Benzaldehyde
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- (b) p-bromoaniline
- (c) 2,4-dibromoaniline
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(xvi) The reaction of tripalmitin, with sodium hydroxide is called:

- (a) Hydrolysis
- (b) Saponification
- (c) Esterification
- (d) Combustion

(xvii) Which one is not Petrochemical?

- (a) Napthalene
- (b) Mineral Oil
- (c) Wax
- (d) Table Salt

(xviii) Chemical adsorption:

- (a) is exothermic
- (b) is irreversible
- (c) takes place at high temp.
- (d) All of these

(xix) The most commonly used absorbent for chromatographic separation of organic compound is:

- (a) Activated charcoal
- (b) Fuller's Earth
- (c) Alumina
- (d) Silica gel

(xx) Grignard reagent is:

- (a) Organo Zinc halide
- (b) Organo cadmium bromide
- (c) n-Butyl Lithium
- (d) Organo Magnesium halide

## Chemistry Mcqs For Subject Specialist Exam

Q.1. Select the best option/answer and fill in the appropriate box on the Answer Sheet. (20)

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- (d) Cl<sub>3</sub>C COOH

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