



CHEMISTRY

BOOKS - NTA MOCK TESTS

NTA NEET SET 100

Chemistry

1. Which statement about hybridization in the following is not correct ?

A. Hybridization is the mixing of atomic orbitals prior to their combining into molecular orbitals

B. sp^2 hybrid orbitals are formed from two p atomic orbitals and one S atomic orbital

C. d^2sp^3 hybrid orbitals are directed towards the corners of a regular octahedron

D. sp^3d hybrid orbitals are all at 90° to one another

Answer: D



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2. Which is the correct order for increasing the energy of subshells ?

A. $5p < 4f < 6s < 5d$

B. $5p < 6s < 4f < 5d$

C. $4f < 5p < 5d < 6s$

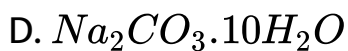
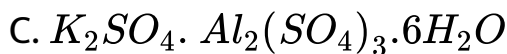
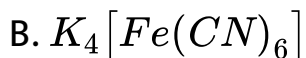
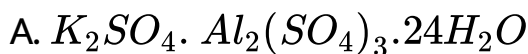
D. $5p < 5d < 4f < 6s$

Answer: B



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3. The formula of alum is



Answer: A



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4. Which of the following statements is/are true for the long form of the periodic table?

A. It reflects the sequence of filling the electrons in the order of sub - energy levels s, p, d and f

B. It helps to predict the stable oxidation states of elements

C. It reflects trends in physical and chemical properties of the elements

D. It helps to predict the relative ionicity of the bonds
between any two elements

Answer: B

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5. If for a binary weak electrolyte the solubility product is 4×10^{-10} at 298K. Calculate its solubility in mol dm^{-3} at the same temperature

A. 4×10^{-5}

B. 2×10^{-5}

C. 8×10^{-10}

D. 16×10^{-20}

Answer: B



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6. In silicon dioxide

A. Each silicon atom is surrounded by four oxygen atoms and each oxygen atom is bonded to two silicon atoms

B. Each silicon atom is surrounded by two oxygen atoms and each oxygen atom is bonded to two silicon atoms

C. Silicon atom is bonded to two oxygen atoms

D. There are double bonds between silicon and oxygen atoms

Answer: A

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7. When iodine is passed through aqueous solutions of NaF, NaBr and NaCl

A. It gives mixture of F_2 , Cl_2 and Br_2

B. It gives chlorine

C. It gives bromine

D. None of these

Answer: D



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8. The rate of reaction is doubled for $10^{\circ}C$ rise in temperature. The increase in the reaction rate as a result of temperature rise from $10^{\circ}C$ to $100^{\circ}C$ is

A. 112

B. 512

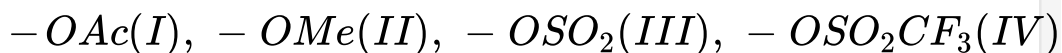
C. 400

D. 614

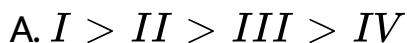
Answer: B

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9. In the following group :



The order of leaving group ability is :



Answer: B





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10. Phenol gives characteristic colouration with

- A. Iodine solution
- B. Bromine water
- C. Neutral $FeCl_3$ solution
- D. Ammonium hydroxide

Answer: C



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11. Which one of the following is used to make 'non - stick' cookware?

A. PVC

B. Polystyrene

C. Polyethylene terephthalate

D. Polytetrafluoroethylene

Answer: D



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12. In Wolf - Kishner reduction, the carbonyl group of aldehydes and ketones is converted into

A. $-CH_2$ group

B. $-CH_3$ group

C. $-CH_2OH$ group

D. $>CHOH$ group

Answer: A



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13. Among the following outermost configurations of transition metals, which shows the highest oxidation state

A. $(n - 1)d^3ns^2$

B. $(n - 1)d^5ns^1$

C. $(n - 1)d^8ns^2$

D. $(n - 1)d^5ns^2$

Answer: D



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14. Froth flotation process used for the concentration of sulphide ore.

A. Galena

B. Casiterite

C. Magnetite

D. Malachite

Answer: A



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15. In a tetragonal crystal

A. $a = b = c$ and $\alpha = \beta = \gamma = 90^\circ$

B. $a = b \neq c$ and $\alpha = \beta = \gamma = 90^\circ$

C. $a \neq b \neq c$ and $\alpha = \beta = \gamma = 90^\circ$

D. $a = b \neq c$ and $\alpha = \beta = 90^\circ, \gamma = 120^\circ$

Answer: B



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16. For the feasibility of a redox reaction in a cell, the e.m.f. should be.

- A. Positive
- B. Fixed
- C. Zero
- D. Negative

Answer: A



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17. which of the following statement is incorrect about resonance

A. Resonance structures should have equal

B. In resonance structures , the constituent atoms should be in the same position

C. In resonance structures , there should not be in the same number of electron pairs

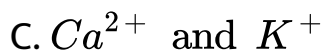
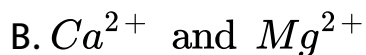
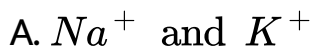
D. Resonance structures should differ only in the location of electrons around the constituent atoms

Answer: C



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18. Which of the following substances cause permanent hardness of water



Answer: B



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19. Which one is not an organometallic compound ?

A. Ethyl magnesium bromide

B. Tetraethyl lead

C. Sodium ethoxide

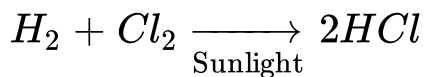
D. Trimethyl aluminium

Answer: C



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20. For the reaction:



taking place on water. Find the order of reaction.

A. 1

B. 2

C. 3

D. 0

Answer: D



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21. Calculate the cell constant if the specific conductance of a Solution is $0.2 \text{ ohm}^{-1}\text{cm}^{-1}$ and its conductance is 0.04 ohm^{-1} .

A. 1cm^{-1}

B. 0cm^{-1}

C. 5cm^{-1}

D. 0.2cm^{-1}

Answer: D



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22. In brown ring complex compound

$[\text{Fe}(\text{H}_2\text{O})_5\text{NO}]\text{SO}_4$, the oxidation state of Fe is-

A. 1

B. 2

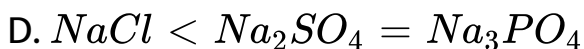
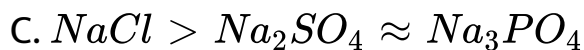
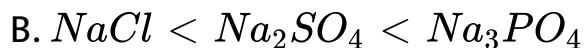
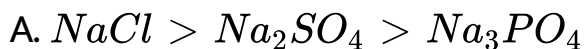
C. 3

D. 0

Answer: A

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23. For $0.1M$ solution, the colligative property will follow the order



Answer: B

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24. Calculate the temperature at which the rms velocity of SO_2 is the same as that of oxygen at $27^\circ C$.

A. 273 K

B. 606 K

C. 303 K

D. 403 K

Answer: B



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25. Which is a characteristic of a catalyst ?

- A. Alters the equilibrium in a reaction
- B. Is always in the same phase as the reactants
- C. Participates in the reaction and provides easier pathway for the same
- D. Does not participate in the reaction

Answer: C



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26. Dehydrohalogenation of an alkyl halide is:

- A. An addition reaction
- B. A substitution reaction

C. An elimination reaction

D. An oxidation reaction

Answer: C



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27. Which is incorrect statement in the following ?

A. α - rays have more penetrating power than β - rays

B. α - rays have less penetrating power than γ - rays

C. β - rays have less penetrating power than γ - rays

D. β - rays have more penetrating power than α - rays

Answer: A



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28. The reagent which forms crystalline osazone derivatives when heated with glucose is?

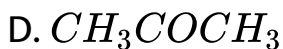
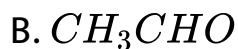
- A. Fehling solution
- B. Phenylhydrazine
- C. Benedict solution
- D. Hydroxylamine

Answer: B



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29. Cyanohydrin of which of the following forms lactic acid



Answer: B



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30. which are the monomers used in the production of nylon-6,6?

- A. Hexamethylene diamine and ethylene glycol
- B. Adipic acid and ethylene glycol
- C. Adipic acid and hexamethylene diamine
- D. Dimethyl terephthalate and ethylene glycol

Answer: C



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31. Azo-dyes are prepared from:

- A. Aniline
- B. Salicylic acid
- C. Benzaldehyde

D. Chlorobenzene

Answer: A



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32. A colourless gas with smell of rotten fish is

A. H_2S

B. PH_3

C. SO_2

D. None of these

Answer: B



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33. Verdigris is

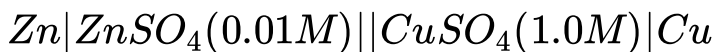
- A. Basic copper acetate
- B. Basic lead acetate
- C. Basic lead
- D. None of these

Answer: A



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34. The emf of a Daniell cell at $298K$ is E_1



When the concentration of $ZnSO_4$ is $1.0M$ and that of $CuSO_4$ is $0.01M$, the *emf* changed to E_2 . What is the relationship between E_1 and E_2 ?

A. $E_2 = 0 \neq E_1$

B. $E_1 > E_2$

C. $E_1 < E_2$

D. $E_1 = E_2$

Answer: B



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35. Which of the following d-block elements has the lowest melting point ?

A. Cr

B. Hg

C. Cu

D. Au

Answer: B



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36. 2mole of PCl_5 were heated in a closed vessel of 2litre capacity. At equilibrium 40 % of PCl_5 dissociated into PCl_3 and Cl_2 . The value of the equilibrium constant is:

A. 0.266

B. 0.53

C. 2.66

D. 5.3

Answer: A

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37. Arrange the following compounds in order of increasing dipole moment .

Toluene (*I*) m-dichlorobenzene (*II*)

o-dichlorobenzene (*III*) . P-dichlorobenzene (*IV*) .

A. $I < IV < II < III$

B. $IV < I < II < III$

C. $IV < I < III < II$

D. $IV < II < I < III$

Answer: B



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38. The orbital angular momentum of an electron in $2s$ -orbital is

A. $\frac{1}{2} \frac{h}{2\pi}$

B. $\frac{h}{2\pi}$

C. $\sqrt{2} \frac{h}{2\pi}$

D. Zero

Answer: D

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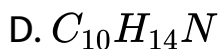
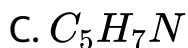
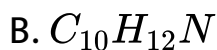
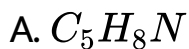
39. Which of the following compound is tribasic acid?

- A. Oxalic acid
- B. Tartaric acid
- C. Lactic acid
- D. Citric acid

Answer: D

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40. An organic compound contains $C = 74.0\%$, $H = 8.65\%$ and $N = 17.3\%$. Its empirical formula is



Answer: C



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41. Arrange the acids (I) H_2SO_3 , (II) H_3PO_3 and (III) $HClO_3$ in the decreasing order of acidity.

A. $I > III > IV$

B. $I > II > III$

C. $II > III > I$

D. $III > I > II$

Answer: D



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42. Which of the following statements is incorrect about the collision theory of chemical reaction ?

- A. A chemical reaction occurs with every molecules collision
- B. Rate is directly proportional to the number of collisions per second
- C. Reactions in the gas phase are always of zero order
- D. Reaction rates are of the order of molecular seeds

Answer: B



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43. Indicate the incorrect statement for a 1 liter sample of $N_2(g)$ and $CO_2(g)$ at 298 K and 1 atm pressure

- A. The average translational KE per molecule is the same in N_2 and CO_2
- B. The rms speed remains same for both N_2 and CO_2
- C. The density of N_2 is less than that of CO_2
- D. The most probable velocity is different for the two gases.

Answer: B



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44. Which of the following when added as an impurity into silicon produces n-type semiconductor ?

A. 1

B. 2

C. 3

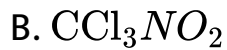
D. 5

Answer: D



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45. When chloroform is treated with conc HNO_3 it gives



D. None of these

Answer: B



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